Cloncurry UAS TTE Facility

Department of State Development,
Manufacturing, Infrastructure and Planning

14-Nov-2019

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Cloncurry Unmanned Aerial Test Facility

Cloncurry Airport

Cloncurry Unmanned Aerial Test Facility

Cloncurry Airport

Client: Department of State Development, Manufacturing, Infrastructure and Planning

ABN: 29 230 178 530

Prepared by

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14-Nov-2019

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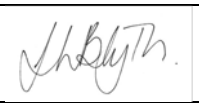
Quality Information

Document	Cloncurry Unmanned Aerial Test Facility
Ref	
Date	14-Nov-2019
Prepared by	Jessica Whiteing
Reviewed by	Joanna Blyth

Revision History

Rev	Revision Date	Details	Authorised	
			Name/Position	Signature
	14-Nov-2019		Joanna Blyth – Technical Director - Planning	

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1.0 Introduction

This application has been prepared on behalf of the Department of State Development, Manufacturing, Infrastructure and Planning (the Applicant) by AECOM Australia Pty Ltd (AECOM). A development permit is sought for a Material Change of Use for Air Services (drone testing facility) on the existing Cloncurry Airport site.

1.1 Background

Queensland Government is looking to establish an aerospace trial, test and evaluation capability to support its commitment to aeronautic developmental programs. The Cloncurry site is proposed to accommodate Boeing's Airpower Teaming System (ATS) program, operating a Trial, Test and Evaluation (TT&E) facility, facilitating unmanned aerial system flight test operations. This is summarised as a 'drone testing facility' for the purpose of this planning report.

The facility will be used for up to five unmanned aircraft measuring 3.1m x 2.6m, weighing 50km and capable of 130 knots. Test airspace will be up to 1,8230m above mean sea level, and within 18,500km of Cloncurry Aerodrome. The facility is projected to accommodate a flight test team of approximately 16 staff, peaking at 50 people (including observers) for specific activities. The facility would include a hangar and working spaces, basic facilities for staff (amenities block, kitchenette, etc), power, water and communications connectivity.

1.2 The Applicant

The Applicant for the proposed development is the Department of State Development, Manufacturing, Infrastructure and Planning (DSDMIP). DSDMIP is committed to fostering development in Queensland that supports regional communities and enables the growth of local skills and employment.

1.3 Application Details

An overview of the subject site and the development application is provided in Table 1.

Table 1 Application details

Item	Application Details
Property Address/Description	Sir Hudson Fysh Drive, Cloncurry QLD 4824 Lot 36 on RP884323
Registered Owner	Cloncurry Shire Council
Applicant	Department of State Development, Manufacturing, Infrastructure and Planning
Local Authority	Cloncurry Shire Council
Total Site Area	182.5ha
Existing Use	Air services
Proposed Use	Air services
Zone	Community facilities
Overlays	• Airport environs - Public safety area - Airport environs zone - Building restricted areas - Airport runway • Flood hazard

Item	Application Details
	- AEP 1% - AEP 0.2% • Bushfire prone area (SPP) overlay code - Potential impact buffer

1.4 Scope of the Development Application

The Development Application seeks a Development Permit for a Material Change of Use for Air Services.

In accordance with the *Planning Act 2016* and the Cloncurry Shire Planning Scheme 2016, the application is Impact Assessable.

1.5 Supporting Documentation

The following documentation has been included in support of this development application.

Table 2 Outline of Supporting Documentation

Document	Appendix
DA Form 1 (including Owners Consent)	A
Site Plans	B
Code Assessment Tables	C
Technical Reports	D
Copy of SARA Prelodgement Advice	E

1.6 Contact

The Applicant contact for this application is:

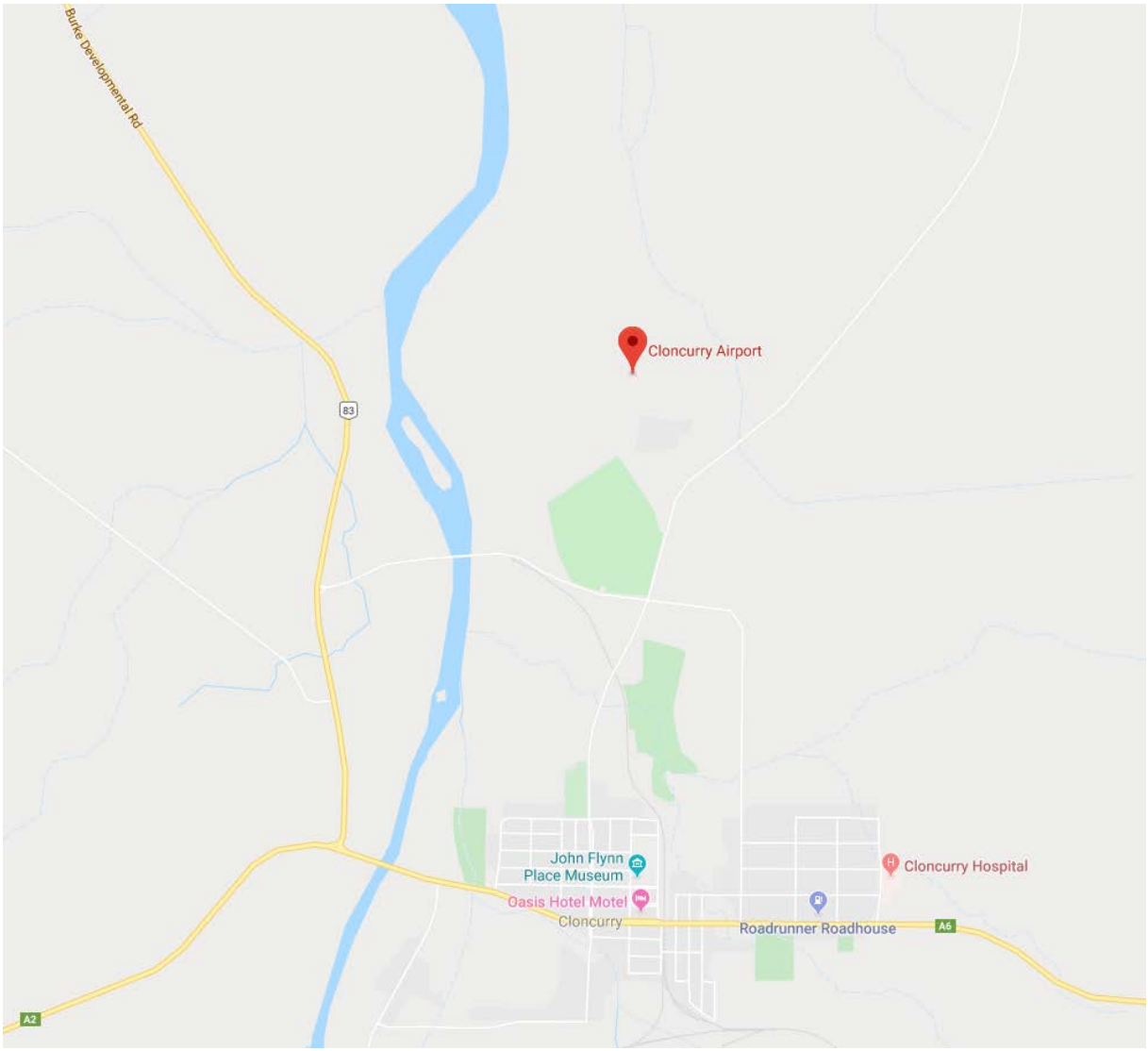
Jessica Whiteing, Planner
AECOM Australia Pty Ltd
PO Box 1307
Fortitude Valley QLD 4006
Ph: 07 3553 3737
Fax: 07 3553 2050
Email: Jessica.Whiteing@aecom.com

2.0 Site Location

2.1 General Locality

The subject site is located approximately 5km north of the Cloncurry Township, located on the eastern side of the Cloncurry River and accessed via Sir Hudson Fysh Drive. The site is currently used for the purpose of the Cloncurry Airport, a Council operated facility operating five days a week and catering for four aircraft movements per day (two in, two out).

Figure 1 General location of site



2.2 Land Subject to the Application

The subject site constitutes Lot 36 on RP884323, spanning approximately 182 hectares. The site has a road frontage to Sir Hudson Fysh Drive, which facilitates all access and egress for the site. The site is currently improved with the Cloncurry Airport, which is mainly used for the fly in fly out (FIFO) workforce of the surrounding area.

There are a number of other aviation related activities located on the site, including private hangars storing light aircraft and helicopters, as well as fuel bowsers owned by BP and AVGAS.

2.3 Land Owners Consent

The site is owned by Cloncurry Shire Council. A signed copy of land owners consent for the purpose of this application has been included in Appendix A.

2.4 Surrounding Locality

The subject site is located between the rural and urban areas of Cloncurry, approximately 3km north of the urban footprint of Cloncurry township. The site is located on the eastern side of the Cloncurry River and in close proximity to the Barkly Highway.

The land uses adjoining and in proximity to the site include:

- South-east: Low and medium impact industry uses
- South: Cloncurry Racecourse, buffering the site from the township
- West: Vacant land, zoned Community facilities and under strata title
- North: Vacant land, zoned Rural and under strata title

2.5 Access, Parking and Mobility

2.5.1 Vehicular Access

The site's address is Sir Hudson Fysh Drive (also signed as Aerodrome Road), leading off Ernest Henry Road. Sir Hudson Fysh Drive facilitates access and egress for all uses located on the airport site.

2.6 Infrastructure

The site is currently connected to an existing water main that services Cloncurry Airport, identified through Dial Before You Dig (DBYD) plans. The water main runs along Sir Hudson Fysh Drive, to the south east of the airport facilities. The proposed development is not anticipated to require access to this water main, as a storage tank and pump system is planned.

The site also includes existing stormwater infrastructure that will be improved for the purpose of the proposed development. Plans for improvement are discussed in section 3.5.

2.7 Environment

2.7.1 Vegetation

The State Assessment Referral Agency mapping has been consulted to determine the State environmental interests over the site. It has been determined that the facility and associated infrastructure will be located within the mapped non-remnant (category X) portions of the site. As the site is under freehold ownership, a permit under the *Planning Regulation 2016* for clearing native vegetation will not be required for development in this area.

There are no mapped vegetation management wetlands or watercourses and drainage features on the property. There is also no essential habitat for protected wildlife species mapped over the site. The site is also outside the NC Act flora survey trigger map.

2.7.2 Contamination

The site is not included on the Contaminated Land Register.

2.7.3 Heritage

A search of the Department of Aboriginal and Torres Strait Islander Partnerships (DATSIP) Cultural Heritage Database and Register has been completed for the Cloncurry Airport and there are no Aboriginal cultural heritage points identified. There are also no State or local heritage listed items within the site area. Non-statutory registers have identified that the Cloncurry Airfield and QANTAS

Hangar (ID 526) are on the site. There are no statutory regulations pertaining to development in proximity to the hangar. It is highly unlikely that the proposed development would impact the hangar in any way.

2.7.4 Stormwater and Flooding

Review of Planning Scheme mapping indicates that the site is flood affected (refer to Appendix A). The north-western section of the site is within the AEP (Annual Exceedance Probability) 1% flood area, and the remainder of the site is within the AEP 0.2% flood area. Assessment of the proposed development against the Flood Overlay Code has been undertaken and the proposed development is considered to comply with all performance outcomes identified of the overlay code (see Appendix C for detailed assessment against the code).

Existing stormwater infrastructure on the site is proposed to be upgraded for the purpose of the proposed development. The proposed stormwater management solution is detailed in Section 3.5 of this report.

3.0 Development Proposals

3.1 General Description

The proposed development is for the establishment of a drone testing facility, operating on the site of the existing Council operated Cloncurry Airport. The proposed development will facilitate the movement of up to five unmanned aircraft, measuring 3.1m x 2.6m with a capability of 130 knots. The test airspace would be up to 1,830 feet above mean sea level and within 18,500km of Cloncurry Aerodrome. The facility is anticipated to be supported by approximately 16 staff, with a peak occupation of 50 people (including observers) during specific activities. The proposed facility will constitute hangar space, staff working spaces, basic facilities for staff, power, water and communications connectivity.

The proposed development constitutes two key areas; landside and airside. The landside area will incorporate the operational facilities, hardstand areas, hangar and supporting infrastructure. The airside area will incorporate radar equipment and hardstand areas for aircraft.

3.2 Design

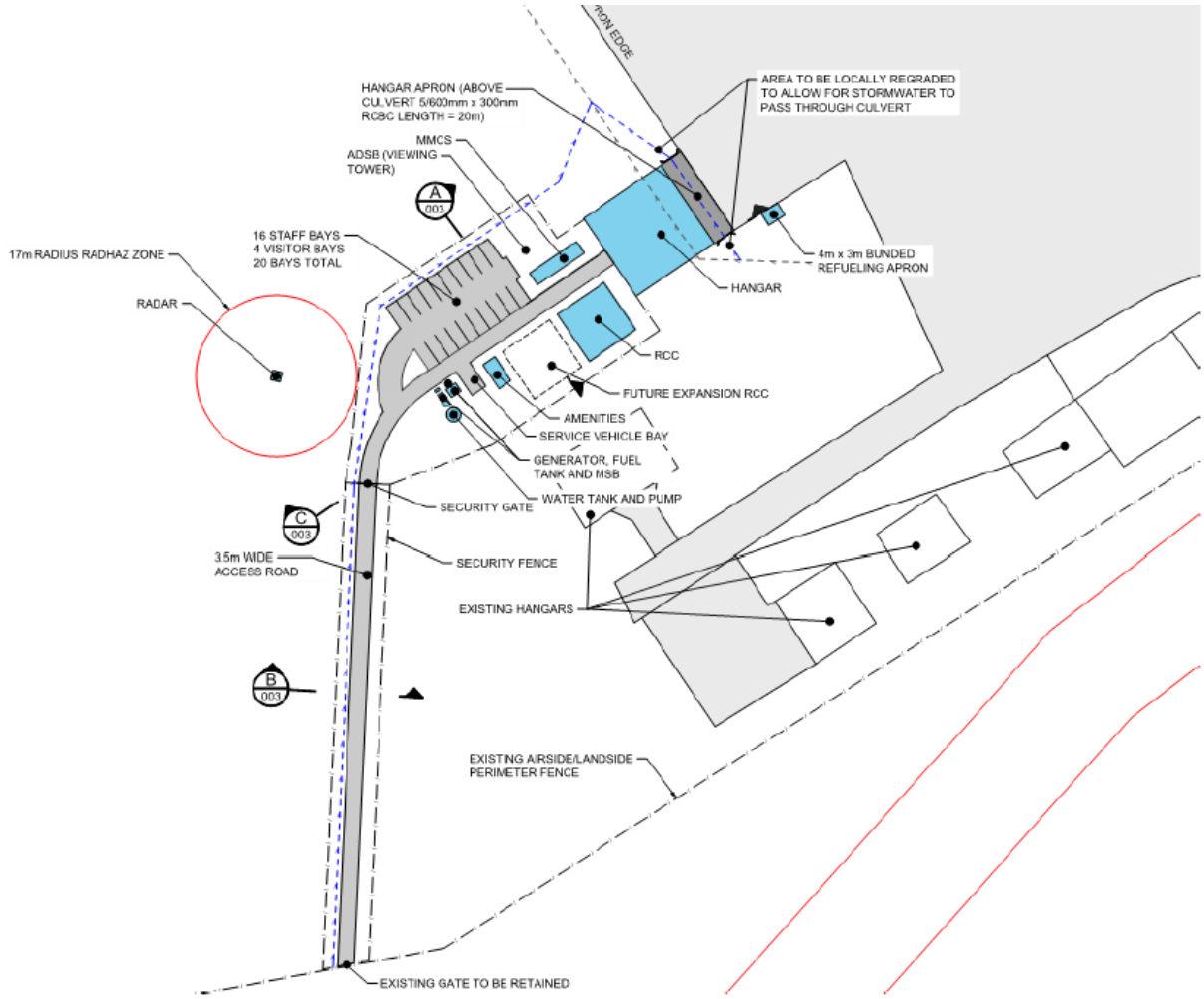
3.2.1 Building design, height and density

Table 3 includes the built form proposed for the landside area, depicted in Figure 2. Plans depicting the proposed layout and elevations are included in Appendix B.

Table 3 Landside built form

Building	Dimensions	Design
Hangar	20m x 20m x 7.5m height	• 200mm thick concrete slab on ground • Colourbond shed construction • Large centre opening doors that open to 12m wide and 5m high
Range Control Centre (RCC) #1	12m x 12m x 3.7m height	• Located on hardstand area • Slightly raised to allow under croft for services • Capacity for 28 workstations and including basic kitchenette amenities • 3 phase electrical distribution board and communications links
RCC#2	12m x 12m x 3.7m height	• Located on hardstand area • Slightly raised to allow under croft for services • Capacity for 28 workstations and including basic kitchenette amenities • 3 phase electrical distribution board and communications links
Amenities	6m x 6m x 3.5m height	• Modular female/male toilets • Water supply from airport building and containing own effluent
MMCS Container	Shipping container 12.2m x 2.4m x 2.6m height	• Concrete slab • Elevated container to minimise water ingress • 3 phase power supply

Figure 2 Site layout



The airside area will include radar equipment and aircraft. The following equipment will be installed by QinetQ and include the following infrastructure:

- Concrete pad 2m x 2m
- Dedicated power supply from the new main switchboard. The power supply will be backed up via a standby diesel generator
- Fibre optic cable link run underground in a 100mm white PVC conduit with 500mm minimum cover from the Radar to the RCC building.
- Obstacle light to top of tower
- Tower arrangement to support the radar equipment similar to the extract below from apac infrastructure, AL220

3.2.2 Setbacks

The element of the proposed development closest to the nearest boundary is the RCC#1 demountable building, setback approximately 90m from the Aerodrome Road corridor boundary. The hangar will be setback approximately 150m from the existing runway. Plans included in Appendix B illustrate the proposed built form setbacks to existing site infrastructure.

3.3 Landscaping

No additional landscaping is proposed for the site.

3.4 Traffic, Transport and Access

3.4.1 Vehicular Access

Vehicular access to the proposed development will be facilitated via the existing sealed Sir Hudson Fysh Drive and dirt accessway that connects to the boundary of the portion of the site that will accommodate the drone testing facility. A new spray-sealed road with a width of 5m will be constructed within the project extents, connecting to the existing dirt accessway to the proposed car parking area, depicted in Figure 3. The design of the new road is considered appropriate to facilitate the access and egress of vehicles up to a medium rigid size.

Figure 3 Vehicular access

3.4.2 Parking

Car parking will be included within the project extent area for the purpose of accommodating employees and visitors to the site of the drone testing facility. Parking will constitute 20 car parking bays to accommodate staff and visitors to the site. Table 9.4.2.3.2 of the planning scheme states a car parking standard for Air Services of one car space per 2 equivalent full-time employees. The projected number of staff for the proposed development is 16, constituting a car parking requirement of 8 spaces. The provision of 20 car parking spaces therefore satisfies the requirements stipulated in Table 9.4.2.3.2.

Table 9.4.2.3.2 also requires additional parking as follows:

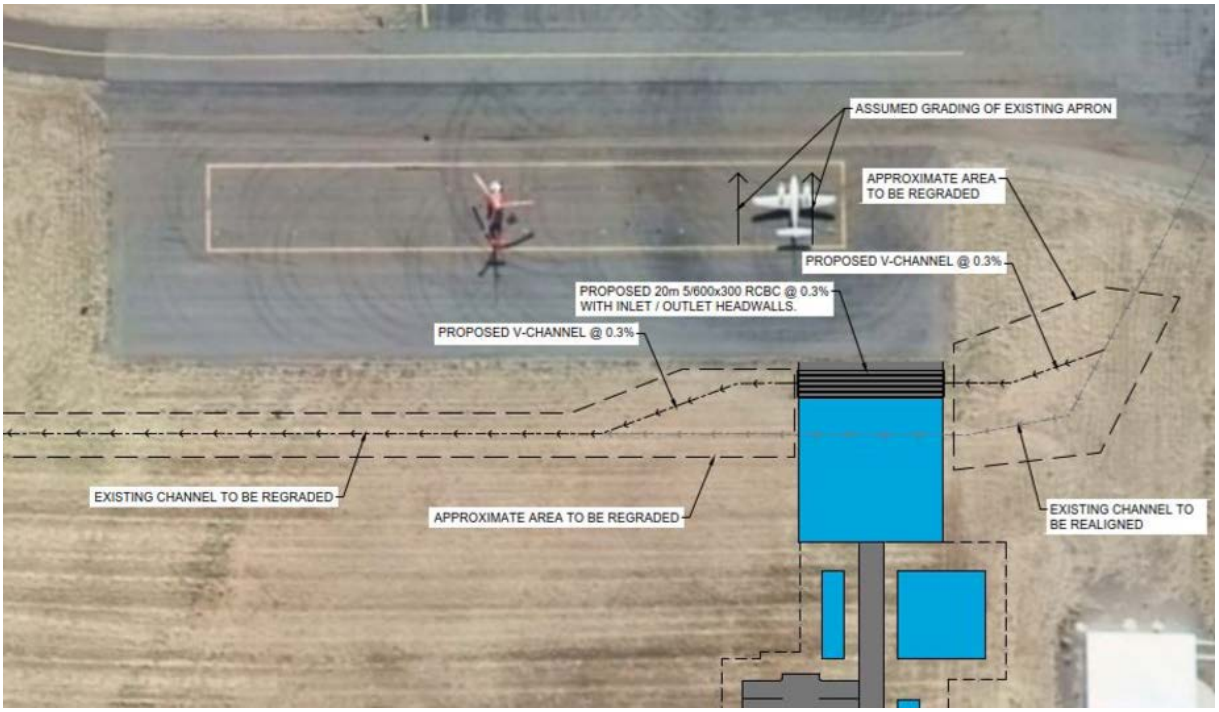
- 1 car space per 5m2 of lounge area; PLUS
- 1 bus space per 50m2 of lounge area.

As the proposed development does not include lounge space and will not function as a passenger air service it is considered that these requirements do not apply to the proposed drone testing facility.

3.5 Stormwater

New stormwater drainage infrastructure is required for the proposed development, to accommodate additional hard stand area and run off. The proposed drainage design consists of realigning an existing open channel and installing five parallel 600x300mm box culverts, as shown in Figure 4. There is an existing open channel that runs through the proposed hangar building. This channel will be realigned to run under the proposed concrete slab connection between the existing apron and proposed hangar. Five parallel 600x300 box culverts will run under the concrete slab between the realigned open channels. A portion of the existing channel to the north will need be to regraded to ensure a sufficient fall is maintained.

Figure 4 Stormwater drainage



3.6 Infrastructure

3.6.1 Potable water

It is proposed that water will be provided to the facility by a storage tank and pump system.

There may be potential to connect to the existing mains water supply, however further investigation is required. Appendix D contains detailed information regarding potable water on site.

3.6.2 Wastewater

The wastewater system will consist of a below ground system that will store wastewater prior to collection and transportation off site. The storage system will be located beneath the amenities building. Appendix D contains detailed information regarding waste water on site.

3.6.3 Fencing and gates

Fencing around the project area will comprise a 1800mm high fence, similar to the existing fence around the airport perimeter. Gates will be manually locked, with no access control or CCTV proposed.

3.6.4 Electrical infrastructure

The electrical (power and lighting) systems shall conform to the requirements of all applicable legislation, codes of practice and guidance publications relevant to Service and Installation Rules and

Australian Standards. Specific details regarding electrical infrastructure and connections and proposed generators are included in Appendix D.

4.0 Statutory Planning Framework

4.1 Planning Act 2016

Under the provisions stipulated in the *Planning Act 2016*, this proposal constitutes an Impact Assessable development application for a Material Change of Use.

This proposal will be assessed against the applicable assessment provisions, as outlined in Chapter 3, Part 2, Division 1 of the *Planning Act 2016*.

4.2 Referrals

Prelodgement advice was received from SARA on the 29th October 2019 confirming that the application does not trigger referral under the *Planning Act 2016*. A copy of the SARA advice statement is included in Appendix E.

4.3 North West Queensland Regional Plan

The subject site is within the urban footprint of the North West Queensland Regional Plan. The regional plan recognises Cloncurry as the only major rural activity centre for the region, representing an area of key employment, business services and commercial uses. Cloncurry has a significant aeronautic history, being the birthplace of the Royal Flying Doctor Service. The establishment of the drone testing facility in Cloncurry is in keeping with the town's strong pioneering history. The development may attract additional supporting activities including manufacturing and transport services, which is commensurate with the regional plan's vision for Cloncurry.

5.0 Cloncurry Shire Planning Scheme 2016

5.1 Definition of Use

The proposed use of the site as a drone testing facility is defined as 'Air Services' under the Cloncurry Shire Planning Scheme 2016:

Premises used for any of the following:

- *the arrival and departure of aircraft*
- *the housing, servicing, refuelling, maintenance and repair of aircraft*
- *the assembly and dispersal of passengers or goods on or from an aircraft*
- *any ancillary activities directly serving the needs of passengers and visitors to the use*
- *associated training and education facilities*
- *aviation facilities*

5.2 Zone

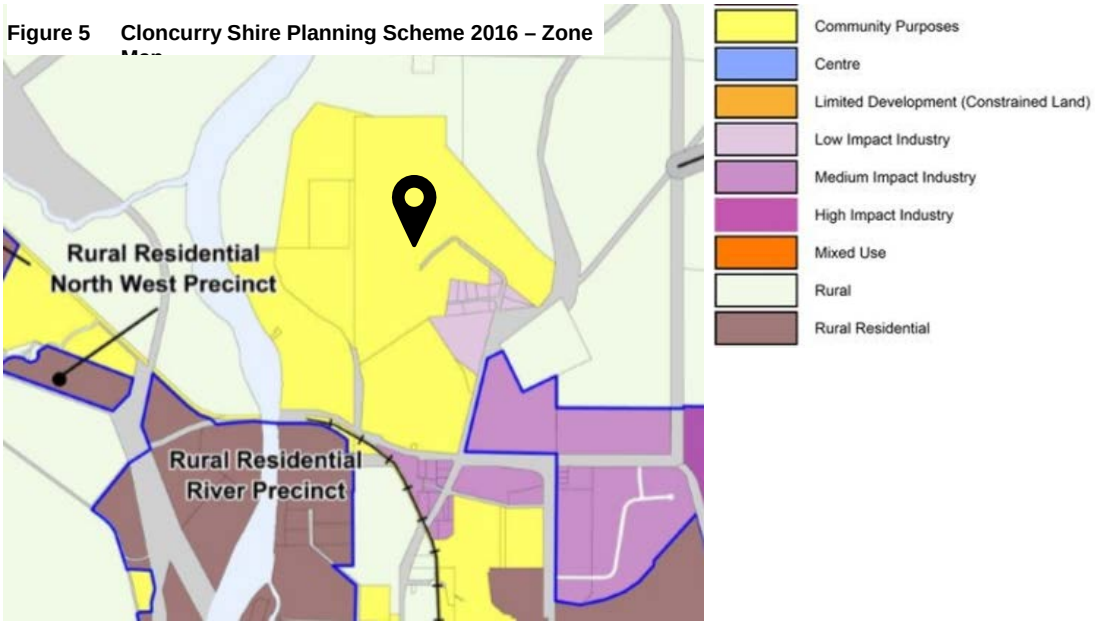
The subject site is located within the Community facilities zone of the Cloncurry Shire Planning Scheme 2016, as shown in Figure 5.

The purpose of the Community facilities zone is to enable community related activities and facilities including the provision of municipal services, public utilities, government installations, social infrastructure and transport and telecommunication networks. This purpose is achieved through the following:

- land uses owned or operated by Commonwealth, State or Local government for purposes such as air services, cemeteries, community uses, sport and recreation, educational establishments, emergency services, hospitals, utility installations and transport networks are facilitated
- provision of uses, facilities and works which by virtue of their location, intensity, combination of uses, operations or site characteristics are best managed in a use specific land use allocation
- private community services and facilities including educational establishments, places of worship, private hospitals and tourist parks are appropriate
- a limited range of compatible uses are provided to fulfil ancillary functions which are located in publicly accessible locations and are well integrated with surrounding uses
- where practical, multiple community activities are accommodated, by co-locating a variety of robust facilities suitable for shared use.

The proposed use of the site as a State Government supported drone testing facility is ancillary to the existing use of the site as an airport, fulfilling the intent for the zone of co-locating a variety of facilities and supporting shared infrastructure. The proposed development is therefore considered commensurate with purpose of the Community facilities zone.

Figure 5 Cloncurry Shire Planning Scheme 2016 – Zone Map



5.3 Approvals Required

A development permit for a Material Change of Use is sought for an Air Services use.

5.4 Level of Assessment

In accordance with Table 5.5-2 of the Cloncurry Shire Planning Scheme 2016, a Material Change of Use for Air Services in the Community facilities zone requires an Impact Assessable Development Application.

5.5 Strategic Framework

The Strategic Framework is supportive of growth in Cloncurry's aviation industry, stating a key strategic intent for Cloncurry Airport to play an important role in aviation services in the North West Queensland Region. Element 3.8.3 *Integrated Transport System* of the Strategic Framework states that Cloncurry Airport will provide opportunities for increased air travel services and expansion of ancillary facilities as required. The location of new industrial and aviation uses are planned for the area surrounding the airport, to the north and north-east of Cloncurry Township. It is considered that the development of a drone testing facility is commensurate with the Strategic Framework intent for the Cloncurry Airport site.

5.6 Relevant Codes and Policies

The relevant planning scheme codes have been identified and addressed as part of this development application, including the following:

- Community facilities zone code
- Airport environs overlay code
- Flood hazard overlay code
- Bushfire prone area (SPP) overlay code
- Car parking and access code
- Landscaping code
- Operational works and services code
- Public utility code
- Integrated water cycle management code
- Earthworks code.

A detailed assessment of the proposed development against each of the abovementioned codes is attached in Appendix C.

5.7 Primary Code Assessment

Through assessment of the proposal against the relevant provisions of the Planning Scheme, the development proposal has been found to be generally compliant with the Performance Outcomes and Acceptable Outcomes identified in the relevant codes. In certain circumstances performance solutions are sought in response to the specific circumstances of this proposal and site. The primary codes and specific performance solutions sought are identified below.

5.7.1 Community Facilities Zone Code

PO5: Landscaping must enhance the amenity and streetscape of the locality.

AO5.1: Development provides for a minimum of 10% of the site to be landscaped.

Performance solution: Due to the established nature of the Cloncurry Airport on site and the temporary nature of the built form proposed, it is considered that maintaining the current landscape character of the site is sufficient.

6.0 Conclusion

This application seeks a development permit for a Material Change of Use for Air Services in the Community facilities zone on the existing Cloncurry Airport site. In accordance with the Planning Scheme Level of Assessment Table, the proposed development is Impact Assessable and will be required to be placed on public notification.

The development of a drone testing facility is ancillary to the existing use of the site as the Cloncurry Airport, and supports the vision for the Community facilities zone regarding colocation of compatible activities and shared use of infrastructure. The proposed development supports the Regional Plan's vision for Cloncurry as a pioneering regional centre, driving new development and sparking the potential for new industries. The proposed development is compliant with the relevant codes and overlays associated with activity on the site. On this basis, it is recommended that Cloncurry Shire Council approve the application subject to relevant and reasonable conditions.

Appendix A

DA Form 1 & Owners Consent

DA Form 1 – Development application details

Approved form (version 1.1 effective 22 JUNE 2018) made under section 282 of the Planning Act 2016.

This form **must** be used to make a development application **involving code assessment or impact assessment**, except when applying for development involving building work.

For a development application involving **building work only**, use *DA Form 2 – Building work details*.

For a development application involving **building work associated with any other type of assessable development (i.e. material change of use, operational work or reconfiguring a lot)**, use this form (*DA Form 1*) **and** parts 4 to 6 of *DA Form 2 – Building work details.*

Unless stated otherwise, all parts of this form **must** be completed in full and all required supporting information **must** accompany the development application.

One or more additional pages may be attached as a schedule to this development application if there is insufficient space on the form to include all the necessary information.

This form and any other form relevant to the development application must be used to make a development application relating to strategic port land and Brisbane core port land under the *Transport Infrastructure Act 1994*, and airport land under the *Airport Assets (Restructuring and Disposal) Act 2008.* For the purpose of assessing a development application relating to strategic port land and Brisbane core port land, any reference to a planning scheme is taken to mean a land use plan for the strategic port land, Brisbane port land use plan for Brisbane core port land, or a land use plan for airport land.

Note: *All terms used in this form have the meaning given under the Planning Act 2016, the Planning Regulation 2017, or the Development Assessment Rules (DA Rules).*

PART 1 – APPLICANT DETAILS

1) Applicant details	
Applicant name(s) (*individual or company full name*)	Department of State Development, Mining, Infrastructure and Planning
Contact name *(only applicable for companies)*	c/o AECOM – Jessica Whiteing
Postal address *(P.O. Box or street address)*	540 Wickham Street
Suburb	Fortitude Valley
State	QLD
Postcode	4006
Country	Australia
Contact number	07 3553 3737
Email address *(non-mandatory)*	Jessica.whiteing@aecom.com
Mobile number *(non-mandatory)*	0405 222 025
Fax number *(non-mandatory)*	
Applicant's reference number(s) *(if applicable)*	

2) Owner's consent
2.1) Is written consent of the owner required for this development application?
☒ Yes – the written consent of the owner(s) is attached to this development application ☐ No – proceed to 3)

PART 2 – LOCATION DETAILS

3) Location of the premises *(complete 3.1) or 3.2), and 3.3) as applicable)*

***Note**: Provide details below and attach a site plan for any or all premises part of the development application. For further information, see DA Forms Guide: Relevant plans.*

3.1) Street address and lot on plan

☐ Street address **AND** lot on plan (a*ll lots must be listed*), ***or***

☐ Street address **AND** lot on plan for an adjoining or adjacent property of the premises *(appropriate for development in water but adjoining or adjacent to land e.g. jetty, pontoon; all lots must be listed).*

a)	Unit No.	Street No.	Street Name and Type	Suburb
			Sir Hudson Fysh Drive	Cloncurry
	Postcode	Lot No.	Plan Type and Number *(e.g. RP, SP)*	Local Government Area(s)
		36	RP884323.	Cloncurry Shire Council
b)	Unit No.	Street No.	Street Name and Type	Suburb
	Postcode	Lot No.	Plan Type and Number *(e.g. RP, SP)*	Local Government Area(s)

3.2) Coordinates of premises *(appropriate for development in remote areas, over part of a lot or in water not adjoining or adjacent to land e.g. channel dredging in Moreton Bay)*

***Note**: Place each set of coordinates in a separate row. Only one set of coordinates is required for this part.*

☐ Coordinates of premises by longitude and latitude

Longitude(s)	Latitude(s)	Datum	Local Government Area(s) *(if applicable)*
		☐ WGS84 ☐ GDA94 ☐ Other:	

☐ Coordinates of premises by easting and northing

Easting(s)	Northing(s)	Zone Ref.	Datum	Local Government Area(s) *(if applicable)*
		☐ 54 ☐ 55 ☐ 56	☐ WGS84 ☐ GDA94 ☐ Other:	

3.3) Additional premises

☐ Additional premises are relevant to this development application and their details have been attached in a schedule to this application

☐ Not required

4) Identify any of the following that apply to the premises and provide any relevant details

☐ In or adjacent to a water body or watercourse or in or above an aquifer

Name of water body, watercourse or aquifer:

☐ On strategic port land under the *Transport Infrastructure Act 1994*

Lot on plan description of strategic port land:

Name of port authority for the lot:

☐ In a tidal area

Name of local government for the tidal area *(if applicable)*:

Name of port authority for tidal area *(if applicable)*:

☐ On airport land under the *Airport Assets (Restructuring and Disposal) Act 2008*

Name of airport:

☐ Listed on the Environmental Management Register (EMR) under the *Environmental Protection Act 1994*	
EMR site identification:	
☐ Listed on the Contaminated Land Register (CLR) under the *Environmental Protection Act 1994*	
CLR site identification:	

5) Are there any existing easements over the premises?

Note: Easement uses vary throughout Queensland and are to be identified correctly and accurately. For further information on easements and how they may affect the proposed development, see DA Forms Guide.

☒ Yes – All easement locations, types and dimensions are included in plans submitted with this development application

☐ No

PART 3 – DEVELOPMENT DETAILS

Section 1 – Aspects of development

6.1) Provide details about the first development aspect

a) What is the type of development? *(tick only one box)*

☒ Material change of use ☐ Reconfiguring a lot ☐ Operational work ☐ Building work

b) What is the approval type? *(tick only one box)*

☐ Development permit ☐ Preliminary approval ☐ Preliminary approval that includes a variation approval

c) What is the level of assessment?

☐ Code assessment ☒ Impact assessment *(requires public notification)*

d) Provide a brief description of the proposal *(e.g. 6 unit apartment building defined as multi-unit dwelling, reconfiguration of 1 lot into 3 lots)*:

Development of a drone testing facility on the existing Cloncurry Airport site, ancillary to normal airport operations. One hangar, workspaces and amenities block are proposed for the site, as well as increased stormwater infrastructure.

e) Relevant plans

***Note**: Relevant plans are required to be submitted for all aspects of this development application. For further information, see DA Forms guide: Relevant plans.*

☒ Relevant plans of the proposed development are attached to the development application

6.2) Provide details about the second development aspect

a) What is the type of development? *(tick only one box)*

☐ Material change of use ☐ Reconfiguring a lot ☐ Operational work ☐ Building work

b) What is the approval type? *(tick only one box)*

☐ Development permit ☐ Preliminary approval ☐ Preliminary approval that includes a variation approval

c) What is the level of assessment?

☐ Code assessment ☐ Impact assessment *(requires public notification)*

d) Provide a brief description of the proposal *(e.g. 6 unit apartment building defined as multi-unit dwelling, reconfiguration of 1 lot into 3 lots)*:

e) Relevant plans

***Note**: Relevant plans are required to be submitted for all aspects of this development application. For further information, see DA Forms Guide: Relevant plans.*

☐ Relevant plans of the proposed development are attached to the development application

6.3) Additional aspects of development
☐ Additional aspects of development are relevant to this development application and the details for these aspects that would be required under Part 3 Section 1 of this form have been attached to this development application ☐ Not required

Section 2 – Further development details

7) Does the proposed development application involve any of the following?	
Material change of use	☒ Yes – complete division 1 if assessable against a local planning instrument
Reconfiguring a lot	☐ Yes – complete division 2
Operational work	☐ Yes – complete division 3
Building work	☐ Yes – complete *DA Form 2 – Building work details*

Division 1 – Material change of use

***Note**: This division is only required to be completed if any part of the development application involves a material change of use assessable against a local planning instrument.*

8.1) Describe the proposed material change of use			
Provide a general description of the proposed use	Provide the planning scheme definition *(include each definition in a new row)*	Number of dwelling units *(if applicable)*	Gross floor area (m^2) *(if applicable)*
Air services	Premises used for any of the following: • the arrival and departure of aircraft • the housing, servicing, refuelling, maintenance and repair of aircraft • the assembly and dispersal of passengers or goods on or from an aircraft • any ancillary activities directly serving the needs of passengers and visitors to the use • associated training and education facilities • aviation facilities	NA	NA

8.2) Does the proposed use involve the use of existing buildings on the premises?		
☐ Yes		
☒ No		

Division 2 – Reconfiguring a lot

***Note**: This division is only required to be completed if any part of the development application involves reconfiguring a lot.*

9.1) What is the total number of existing lots making up the premises?

9.2) What is the nature of the lot reconfiguration? *(tick all applicable boxes)*	
☐ Subdivision *(complete 10))*	☐ Dividing land into parts by agreement *(complete 11))*
☐ Boundary realignment *(complete 12))*	☐ Creating or changing an easement giving access to a lot from a construction road *(complete 13))*

10) Subdivision 10.1) For this development, how many lots are being created and what is the intended use of those lots:

Intended use of lots created	Residential	Commercial	Industrial	Other, please specify:
Number of lots created				

10.2) Will the subdivision be staged?	
☐ Yes – provide additional details below ☐ No	
How many stages will the works include?	
What stage(s) will this development application apply to?	

11) Dividing land into parts by agreement – how many parts are being created and what is the intended use of the parts?				
Intended use of parts created	Residential	Commercial	Industrial	Other, please specify:
Number of parts created				

12) Boundary realignment 12.1) What are the current and proposed areas for each lot comprising the premises?			
Current lot		Proposed lot	
Lot on plan description	Area (m^2)	Lot on plan description	Area (m^2)

12.2) What is the reason for the boundary realignment?

13) What are the dimensions and nature of any existing easements being changed and/or any proposed easement? *(attach schedule if there are more than two easements)*				
Existing or proposed?	Width (m)	Length (m)	Purpose of the easement? *(e.g. pedestrian access)*	Identify the land/lot(s) benefitted by the easement

Division 3 – Operational work

***Note**: This division is only required to be completed if any part of the development application involves operational work.*

14.1) What is the nature of the operational work?		
☐ Road work	☐ Stormwater	☐ Water infrastructure
☐ Drainage work	☐ Earthworks	☐ Sewage infrastructure
☐ Landscaping	☐ Signage	☐ Clearing vegetation
☐ Other – please specify:		

14.2) Is the operational work necessary to facilitate the creation of new lots? *(e.g. subdivision)*	
☐ Yes – specify number of new lots:	
☐ No	

14.3) What is the monetary value of the proposed operational work? *(include GST, materials and labour)*
$

PART 4 – ASSESSMENT MANAGER DETAILS

15) Identify the assessment manager(s) who will be assessing this development application

Cloncurry Shire Council

16) Has the local government agreed to apply a superseded planning scheme for this development application?

☐ Yes – a copy of the decision notice is attached to this development application
☐ Local government is taken to have agreed to the superseded planning scheme request – relevant documents attached
☒ No

PART 5 – REFERRAL DETAILS

17) Do any aspects of the proposed development require referral for any referral requirements?
***Note**: A development application will require referral if prescribed by the* Planning Regulation 2017*.*

☐ No, there are no referral requirements relevant to any development aspects identified in this development application – proceed to Part 6

Matters requiring referral to the **Chief Executive of the Planning Regulation 2017:**

☐ Clearing native vegetation
☐ Contaminated land *(unexploded ordnance)*
☐ Environmentally relevant activities (ERA) *(only if the ERA have not been devolved to a local government)*
☐ Fisheries – aquaculture
☐ Fisheries – declared fish habitat area
☐ Fisheries – marine plants
☐ Fisheries – waterway barrier works
☐ Hazardous chemical facilities
☐ Queensland heritage place *(on or near a Queensland heritage place)*
☐ Infrastructure – designated premises
☐ Infrastructure – state transport infrastructure
☐ Infrastructure – state transport corridors and future state transport corridors
☐ Infrastructure – state-controlled transport tunnels and future state-controlled transport tunnels
☐ Infrastructure – near a state-controlled road intersection
☐ On Brisbane core port land near a State transport corridor or future State transport corridor
☐ On Brisbane core port land – ERA
☐ On Brisbane core port land – tidal works or work in a coastal management district
☐ On Brisbane core port land – hazardous chemical facility
☐ On Brisbane core port land – taking or interfering with water
☐ On Brisbane core port land – referable dams
☐ On Brisbane core port land - fisheries
☐ Land within Port of Brisbane's port limits
☐ SEQ development area
☐ SEQ regional landscape and rural production area or SEQ rural living area – tourist activity or sport and recreation activity
☐ SEQ regional landscape and rural production area or SEQ rural living area – community activity
☐ SEQ regional landscape and rural production area or SEQ rural living area – indoor recreation
☐ SEQ regional landscape and rural production area or SEQ rural living area – urban activity
☐ SEQ regional landscape and rural production area or SEQ rural living area – combined use
☐ Tidal works or works in a coastal management district
☐ Reconfiguring a lot in a coastal management district or for a canal
☐ Erosion prone area in a coastal management district
☐ Urban design

☐ Water-related development – taking or interfering with water
☐ Water-related development – removing quarry material *(from a watercourse or lake)*
☐ Water-related development – referable dams
☐ Water-related development – construction of new levees or modification of existing levees *(category 3 levees only)*
☐ Wetland protection area

Matters requiring referral to the **local government:**
☐ Airport land
☐ Environmentally relevant activities (ERA) (o*nly if the ERA have been devolved to local government)*
☐ Local heritage places

Matters requiring referral to the **chief executive of the distribution entity or transmission entity:**
☐ Electricity infrastructure

Matters requiring referral to:
- The **Chief executive of the holder of the licence**, if not an individual
- The **holder of the licence**, if the holder of the licence is an individual

☐ Oil and gas infrastructure

Matters requiring referral to **the Brisbane City Council:**
☐ Brisbane core port land

Matters requiring referral to the **Minister under the *Transport Infrastructure Act 1994*:**
☐ Brisbane core port land (inconsistent with Brisbane port LUP for transport reasons)
☐ Strategic port land

Matters requiring referral to the **relevant port operator:**
☐ Land within Port of Brisbane's port limits (below high-water mark)

Matters requiring referral to the **Chief Executive of the relevant port authority:**
☐ Land within limits of another port (below high-water mark)

Matters requiring referral to the **Gold Coast Waterways Authority:**
☐ Tidal works, or work in a coastal management district in Gold Coast waters

Matters requiring referral to the **Queensland Fire and Emergency Service:**
☐ Tidal works marina *(more than six vessel berths)*

18) Has any referral agency provided a referral response for this development application?

☐ Yes – referral response(s) received and listed below are attached to this development application
☒ No

Referral requirement	Referral agency	Date of referral response

Identify and describe any changes made to the proposed development application that was the subject of the referral response and the development application the subject of this form, or include details in a schedule to this development application *(if applicable).*

PART 6 – INFORMATION REQUEST

19) Information request under Part 3 of the DA Rules

☒ I agree to receive an information request if determined necessary for this development application
☐ I do not agree to accept an information request for this development application

***Note**: By not agreeing to accept an information request I, the applicant, acknowledge:*

- *that this development application will be assessed and decided based on the information provided when making this development application and the assessment manager and any referral agencies relevant to the development application are not obligated under the DA Rules to accept any additional information provided by the applicant for the development application unless agreed to by the relevant parties*
- *Part 3 of the DA Rules will still apply if the application is an application listed under section 11.3 of the DA Rules.*

Further advice about information requests is contained in the DA Forms Guide.

PART 7 – FURTHER DETAILS

20) Are there any associated development applications or current approvals? *(e.g. a preliminary approval)*

☐ Yes – provide details below or include details in a schedule to this development application
☒ No

List of approval/development application references	Reference number	Date	Assessment manager
☐ Approval ☐ Development application			
☐ Approval ☐ Development application			

21) Has the portable long service leave levy been paid? *(only applicable to development applications involving building work or operational work)*

☐ Yes – a copy of the receipted QLeave form is attached to this development application
☐ No – I, the applicant will provide evidence that the portable long service leave levy has been paid before the assessment manager decides the development application. I acknowledge that the assessment manager may give a development approval only if I provide evidence that the portable long service leave levy has been paid
☒ Not applicable *(e.g. building and construction work is less than $150,000 excluding GST)*

Amount paid	Date paid (dd/mm/yy)	QLeave levy number
$		

22) Is this development application in response to a show cause notice or required as a result of an enforcement notice?

☐ Yes – show cause or enforcement notice is attached
☒ No

23) Further legislative requirements

Environmentally relevant activities

23.1) Is this development application also taken to be an application for an environmental authority for an **Environmentally Relevant Activity (ERA)** under section 115 of the *Environmental Protection Act 1994*?

☐ Yes – the required attachment (form ESR/2015/1791) for an application for an environmental authority accompanies this development application, and details are provided in the table below
☒ No

***Note**: Application for an environmental authority can be found by searching "ESR/2015/1791" as a search term at www.qld.gov.au. An ERA requires an environmental authority to operate. See www.business.qld.gov.au for further information.*

Proposed ERA number:		Proposed ERA threshold:	
Proposed ERA name:			

☐ Multiple ERAs are applicable to this development application and the details have been attached in a schedule to this development application.

Hazardous chemical facilities

23.2) Is this development application for a **hazardous chemical facility**?

☐ Yes – *Form 69: Notification of a facility exceeding 10% of schedule 15 threshold* is attached to this development application
☒ No

***Note**: See www.business.qld.gov.au for further information about hazardous chemical notifications.*

Clearing native vegetation

23.3) Does this development application involve **clearing native vegetation** that requires written confirmation that the chief executive of the *Vegetation Management Act 1999* is satisfied the clearing is for a relevant purpose under section 22A of the *Vegetation Management Act 1999*?

☐ Yes – this development application includes written confirmation from the chief executive of the *Vegetation Management Act 1999* (s22A determination)

☒ No

***Note**: 1. Where a development application for operational work or material change of use requires a s22A determination and this is not included, the development application is prohibited development.*
2. See https://www.qld.gov.au/environment/land/vegetation/applying for further information on how to obtain a s22A determination.

Environmental offsets

23.4) Is this development application taken to be a prescribed activity that may have a significant residual impact on a **prescribed environmental matter** under the *Environmental Offsets Act 2014*?

☐ Yes – I acknowledge that an environmental offset must be provided for any prescribed activity assessed as having a significant residual impact on a prescribed environmental matter

☒ No

***Note**: The environmental offset section of the Queensland Government's website can be accessed at www.qld.gov.au for further information on environmental offsets.*

Koala conservation

23.5) Does this development application involve a material change of use, reconfiguring a lot or operational work within an assessable development area under Schedule 10, Part 10 of the Planning Regulation 2017?

☐ Yes

☒ No

***Note**: See guidance materials at www.des.qld.gov.au for further information.*

Water resources

23.6) Does this development application involve **taking or interfering with underground water through an artesian or subartesian bore, taking or interfering with water in a watercourse, lake or spring, or taking overland flow water under the *Water Act 2000***?

☐ Yes – the relevant template is completed and attached to this development application and I acknowledge that a relevant authorisation or licence under the *Water Act 2000* may be required prior to commencing development

☒ No

***Note**: Contact the Department of Natural Resources, Mines and Energy at www.dnrme.qld.gov.au for further information.*

DA templates are available from https://planning.dsdmip.qld.gov.au/. If the development application involves:

- *Taking or interfering with underground water through an artesian or subartesian bore: complete DA Form 1 Template 1*
- *Taking or interfering with water in a watercourse, lake or spring: complete DA Form1 Template 2*
- *Taking overland flow water: complete DA Form 1 Template 3.*

Waterway barrier works

23.7) Does this application involve **waterway barrier works?**

☐ Yes – the relevant template is completed and attached to this development application

☒ No

DA templates are available from https://planning.dsdmip.qld.gov.au/. For a development application involving waterway barrier works, complete DA Form 1 Template 4.

Marine activities

23.8) Does this development application involve **aquaculture, works within a declared fish habitat area or removal, disturbance or destruction of marine plants?**

☐ Yes – an associated *resource* allocation authority is attached to this development application, if required under the *Fisheries Act 1994*

☒ No

***Note**: See guidance materials at www.daf.qld.gov.au for further information.*

Quarry materials from a watercourse or lake

23.9) Does this development application involve the **removal of quarry materials from a watercourse or lake** under the *Water Act 2000?*

☐ Yes – I acknowledge that a quarry material allocation notice must be obtained prior to commencing development
☒ No

***Note**: Contact the Department of Natural Resources, Mines and Energy at www.dnrme.qld.gov.au and www.business.qld.gov.au for further information.*

Quarry materials from land under tidal waters

23.10) Does this development application involve the **removal of quarry materials from land under tidal water** under the *Coastal Protection and Management Act 1995?*

☐ Yes – I acknowledge that a quarry material allocation notice must be obtained prior to commencing development
☒ No

***Note**: Contact the Department of Environment and Science at www.des.qld.gov.au for further information.*

Referable dams

23.11) Does this development application involve a **referable dam** required to be failure impact assessed under section 343 of the *Water Supply (Safety and Reliability) Act 2008* (the Water Supply Act)?

☐ Yes – the 'Notice Accepting a Failure Impact Assessment' from the chief executive administering the Water Supply Act is attached to this development application
☒ No

***Note**: See guidance materials at www.dnrme.qld.gov.au for further information.*

Tidal work or development within a coastal management district

23.12) Does this development application involve **tidal work or development in a coastal management district**?

☐ Yes – the following is included with this development application:
- ☐ Evidence the proposal meets the code for assessable development that is prescribed tidal work *(only required if application involves prescribed tidal work)*
- ☐ A certificate of title

☒ No

***Note**: See guidance materials at www.des.qld.gov.au for further information.*

Queensland and local heritage places

23.13) Does this development application propose development on or adjoining a place entered in the **Queensland heritage register** or on a place entered in a local government's **Local Heritage Register**?

☐ Yes – details of the heritage place are provided in the table below
☒ No

***Note**: See guidance materials at www.des.qld.gov.au for information requirements regarding development of Queensland heritage places.*

Name of the heritage place:		Place ID:	

Brothels

23.14) Does this development application involve a **material change of use for a brothel**?

☐ Yes – this development application demonstrates how the proposal meets the code for a development application for a brothel under Schedule 3 of the *Prostitution Regulation 2014*
☒ No

Decision under section 62 of the *Transport Infrastructure Act 1994*

23.15) Does this development application involve new or changed access to a state-controlled road?

☐ Yes - this application will be taken to be an application for a decision under section 62 of the *Transport Infrastructure Act 1994* (subject to the conditions in section 75 of the *Transport Infrastructure Act 1994* being satisfied)
☒ No

PART 8 – CHECKLIST AND APPLICANT DECLARATION

24) Development application checklist	
I have identified the assessment manager in question 15 and all relevant referral requirement(s) in question 17 ***Note**: See the Planning Regulation 2017 for referral requirements*	☒ Yes
If building work is associated with the proposed development, Parts 4 to 6 of *DA Form 2 – Building work details* have been completed and attached to this development application	☐ Yes ☒ Not applicable
Supporting information addressing any applicable assessment benchmarks is with development application ***Note**: This is a mandatory requirement and includes any relevant templates under question 23, a planning report and any technical reports required by the relevant categorising instruments (e.g. local government planning schemes, State Planning Policy, State Development Assessment Provisions). For further information, see DA Forms Guide: Planning Report Template.*	☒ Yes
Relevant plans of the development are attached to this development application ***Note**: Relevant plans are required to be submitted for all aspects of this development application. For further information, see DA Forms Guide: Relevant plans.*	☒ Yes
The portable long service leave levy for QLeave has been paid, or will be paid before a development permit is issued *(see 21))*	☐ Yes ☒ Not applicable

25) Applicant declaration
☒ By making this development application, I declare that all information in this development application is true and correct ☒ Where an email address is provided in Part 1 of this form, I consent to receive future electronic communications from the assessment manager and any referral agency for the development application where written information is required or permitted pursuant to sections 11 and 12 of the *Electronic Transactions Act 2001* ***Note**: It is unlawful to intentionally provide false or misleading information.*
Privacy – Personal information collected in this form will be used by the assessment manager and/or chosen assessment manager, any relevant referral agency and/or building certifier (including any professional advisers which may be engaged by those entities) while processing, assessing and deciding the development application. All information relating to this development application may be available for inspection and purchase, and/or published on the assessment manager's and/or referral agency's website. Personal information will not be disclosed for a purpose unrelated to the *Planning Act 2016*, Planning Regulation 2017 and the DA Rules except where: • such disclosure is in accordance with the provisions about public access to documents contained in the *Planning Act 2016* and the Planning Regulation 2017, and the access rules made under the *Planning Act 2016* and Planning Regulation 2017; or • required by other legislation (including the *Right to Information Act 2009*); or • otherwise required by law. This information may be stored in relevant databases. The information collected will be retained as required by the *Public Records Act 2002.*

PART 9 – FOR OFFICE USE ONLY

Date received: | Reference number(s):

Notification of engagement of alternative assessment manager	
Prescribed assessment manager	
Name of chosen assessment manager	
Date chosen assessment manager engaged	

Contact number of chosen assessment manager	
Relevant licence number(s) of chosen assessment manager	

QLeave notification and payment *Note: For completion by assessment manager if applicable*	
Description of the work	
QLeave project number	
Amount paid ($)	
Date paid	
Date receipted form sighted by assessment manager	
Name of officer who sighted the form	

Company owner's consent to the making of a development application under the *Planning Act 2016*

I, David Bezuidenhout

Chief Executive Officer

Of Cloncurry Shire Council

the entity being the owner of the premises identified as follows:

Cloncurry Airport, Sir Hudson Fysh Drive, Cloncurry

consent to the making of a development application under the *Planning Act 2016* by:

Department of State Development, Manufacturing, Infrastructure and Planning

on the premises described above for:

Lot 36 on RP884323

Company seal *[if used]*

Company Name and ACN: ...Cloncurry Shire Council.....

.....
Signature of Chief Executive Officer

17/10/2019
.....
Date

Appendix B

Site Plans

HANGAR APRON (ABOVE CULVERT 5/600mm x 300mm RCBC LENGTH = 20m)

AREA TO BE LOCALLY REGRADED TO ALLOW FOR STORMWATER TO PASS THROUGH CULVERT

RADA RPS-82 RADAR ON 8m AL340 TOWER

MMCS

A 003

FENCE AROUND THE 17m RADIUS RADHAZ ZONE

4m x 3m BUNDED REFUELING APRON

HANGAR

RCC

16 STAFF BAYS
4 VISITOR BAYS
20 BAYS TOTAL

FUTURE EXPANSION RCC

AMENITIES

SERVICE VEHICLE BAY

GENERATOR, FUEL TANK AND MSB

WATER TANK AND PUMP

SECURITY GATE

C 003

5.0m WIDE ACCESS ROAD

SECURITY FENCE

EXISTING HANGARS

B 003

EXISTING AIRSIDE/LANDSIDE PERIMETER FENCE

EXISTING GATE TO BE RETAINED

SIR HUDSON FYSH DRIVE

EASEMENT

NOTES

1. SITE LAYOUT AND SECTIONS CONCEPTUAL ONLY.
2. SURVEY DATA NOT AVAILABLE. DETAILED TOPOGRAPHICAL SURVEY REQUIRED TO CONFIRM ALL CIVIL DESIGN.

LEGEND

- PROPOSED BUILDING
- PROPOSED PAVEMENT (BITUMEN TWO COAT SPRAY SEAL)
- PROPOSED HANGAR APRON
- EXISTING HARDSTAND
- PROPOSED SECURITY FENCE
- PROPOSED TABLE DRAIN
- EXISTING SWALE
- PROPOSED RADHAZ EXTENT
- XXX.XX EXISTING CONTOUR (1m)

NOT FOR CONSTRUCTION

No.	BY	DATE	DESCRIPTION	APPD
C	CWW	14.11.19	REVISED CONCEPT ISSUE	MK
B	CWW	01.11.19	REVISED CONCEPT ISSUE	MK
A	CM	18.10.19	ISSUED FOR CONCEPT	MK

REVISIONS

Scale

SCALE B 0 10 20 25m
1 : 1000 (A3) 1 : 500 (A1)

THE SIGNING OF THIS TITLE BLOCK CONFIRMS THE DESIGN AND DRAFTING OF THIS PROJECT HAVE BEEN PREPARED AND CHECKED IN ACCORDANCE WITH THE AECOM QUALITY ASSURANCE SYSTEM TO ISO 9001-2000

DESIGNED	CM	CHECKED	JC
DRAWN	CM	CHECKED	JC
APPROVED	MK	DATE	

AECOM

RPEQ No.
AECOM Australia Pty Ltd A.B.N. 20 093 846 925

MIMIMUM VIABLE CAPABILITY (MVC)

CLONCURRY AIRPORT
GENERAL ARRANGEMENT

Status	Drg No.	Rev.
CONCEPT	60614450-CIV-DWG-002	C

LAST MODIFIED 1/11/2019 9:13 AM
CAD REF P:\605X\60614450\900_CAD_GIS\10_CAD\20_SHEETS\60614450-CIV-DWG-002.DWG

AECOM

LEGEND

- PROPOSED BUILDING
- PROPOSED PAVEMENT (BITUMEN TWO COAT SPRAY SEAL)
- PROPOSED HANGAR APRON
- PROPOSED SECURITY FENCE
- PROPOSED SWALE
- PROPOSED COMMUNICATIONS
- PROPOSED ELECTRICAL
- PROPOSED WATER
- EXISTING SWALE

FENCE AROUND THE 17m RADIUS RADHAZ ZONE

RADA RPS-82 RADAR ON 8m AL340 TOWER

MMCS

GENERATOR, FUEL TANK AND MAIN SWITCHBOARD MSB

HANGAR APRON (ABOVE CULVERT)

AREA TO BE LOCALLY REGRADED TO ALLOW FOR STORMWATER TO PASS THROUGH CULVERT

HANGAR

ANTENNA CABLE

4m x 3m BUNDED REFUELING APRON

SECURITY GATE

SERVICE VEHICLE BAY

FUTURE EXPANSION RCC

RCC

AMENITIES

WATER TANK AND PUMP

SECURITY FENCE

3.00
2.60
5.40
12.00
3.00
2.00
20.00
5.00
20.00
2.00
2.00
2.40
3.00
1.20
6.00
3.00
12.00
12.00
12.00
2.00
12.00
3.00

INDICATIVE EXISTING SURFACE

0.60
0.50

100mm ORANGE HD PVC CONDUIT FOR ELECTRICITY

80mm WHITE PVC CONDUIT FOR COMMS

TYPICAL SHARED TRENCH DETAIL

NTS

NOT FOR CONSTRUCTION

CAD REF P:\606X\60614450\900_CAD_GIS\910_CAD\25_SKETCHES\60614450-SK-002.DWG

LAST MODIFIED:11/14/2019 9:20 AM

CONCEPT
60614451
C
14.11.2019

SCALE D
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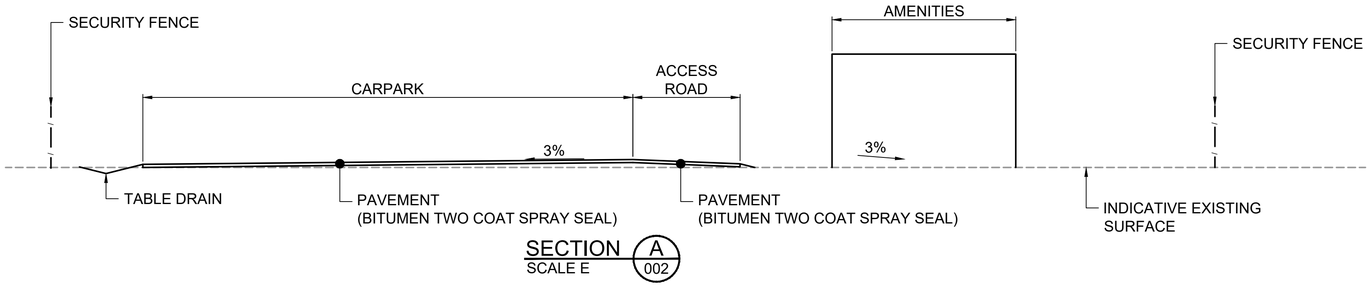
MIMIMUM VIABLE CAPABILITY (MVC)
CLONCURRY AIRPORT
COMBINED SERVICES
60614450-SK-002



SECTION A
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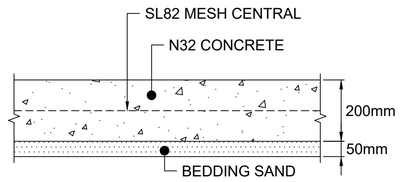
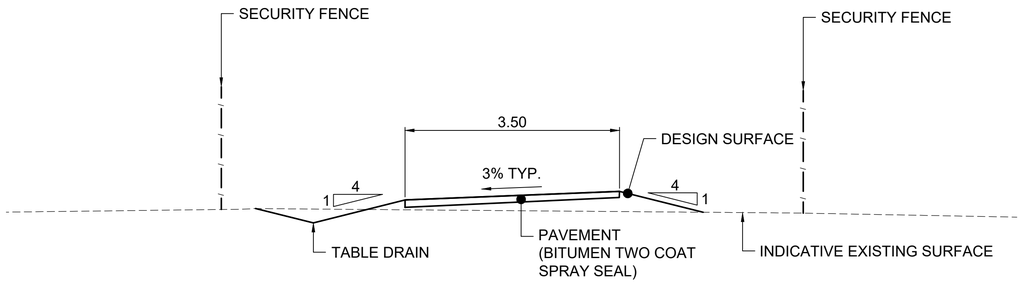


HANGAR APRON PAVEMENT DETAIL
SCALE N.T.S



SECTION B
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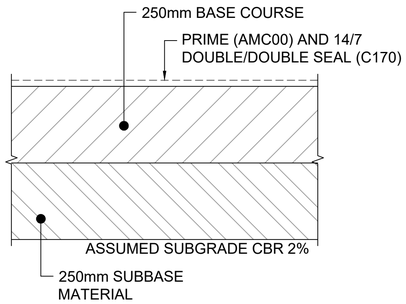
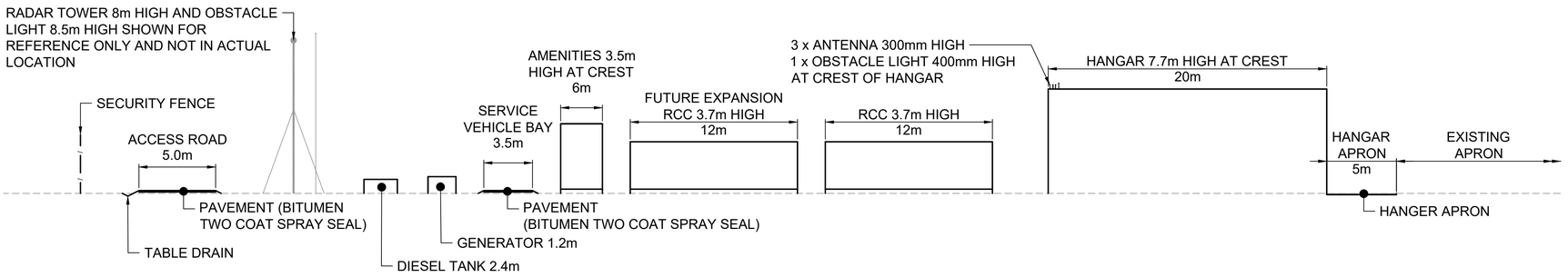


PAVEMENT (BITUMEN TWO COAT SPRAY SEAL) DETAIL
SCALE N.T.S



SECTION C
SCALE D
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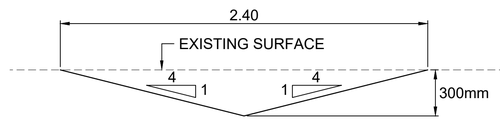

TABLE DRAIN DETAIL
SCALE N.T.S

NOTES

1. SITE LAYOUT AND SECTIONS CONCEPTUAL ONLY.
2. SURVEY DATA NOT AVAILABLE. DETAILED TOPOGRAPHICAL SURVEY REQUIRED TO CONFIRM ALL CIVIL DESIGN.
3. ALL STRUCTURES/BUILDING FOUNDATIONS BY OTHERS.

NOT FOR CONSTRUCTION

No.	BY	DATE	DESCRIPTION	APPD
C	CWW	14.11.19	REVISED CONCEPT ISSUE	MK
B	CWW	01.11.19	REVISED CONCEPT ISSUE	MK
A	CM	18.10.19	ISSUED FOR CONCEPT	MK

REVISIONS

Scale

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SCALE F 0 1.0 2.0 2.5m
1 : 100 (A3) 1 : 50 (A1)

SCALE E 0 1 2 3 4 5m
1 : 200 (A3) 1 : 100 (A1)

THE SIGNING OF THIS TITLE BLOCK CONFIRMS THE DESIGN AND DRAFTING OF THIS PROJECT HAVE BEEN PREPARED AND CHECKED IN ACCORDANCE WITH THE AECOM QUALITY ASSURANCE SYSTEM TO ISO 9001-2000

DESIGNED	CM	CHECKED	JC
DRAWN	CM	CHECKED	JC
APPROVED	MK	DATE	

AECOM

RPEQ No.
AECOM Australia Pty Ltd A.B.N. 20 093 846 925

MIMIMUM VIABLE CAPABILITY (MVC)

CLONCURRY AIRPORT
TYPICAL SECTIONS AND DETAILS

Status	Drg No.	Rev.
CONCEPT	60614450-CIV-DWG-003	C

LAST MODIFIED: 11/4/2019 9:13 AM CAD REF: P:\606X\606144501\900_CAD_GIS\910_CAD\20_SHEETS\606144450-CIV-DWG-003.DWG

Appendix C

Code Assessment Tables

Airport environs overlay code

Performance Outcomes	Acceptable Outcomes	Development Response
Operational Airspace		
Protection of Aviation Facilities		
PO1 Development does not interfere with the function of aviation facilities.	AO1.1 Development located within the building restricted area for an aviation facility does not create: (a) Permanent or temporary physical obstructions in the line of sight between antennas (b) An electrical or electromagnetic field that will interfere with signals transmitted by the facility (c) Reflective surfaces that could deflect or interfere with signals transmitted by the facility AO1.2 Development located within the building restricted area for an aviation facility is designed and constructed to mitigate adverse impacts on the function of the facility. Note –A development proposal on land located within a building restricted area should be referred to Airservices Australia or DoD for assessment .Airservices Australia or DoD w ill provide authoritative advice about the impact of a proposed development on the function of the aviation facility, requirements for risk assessment processes and mitigation methods.	**AO1.1 Complies** The siting and design of the proposed facility has considered existing airport operation and will not obstruct sight lines, electrical or electromagnetic fields or introduce reflective surfaces. **AO1.2 Complies** The siting and design of the proposed facility has considered existing airport operation and relevant CASA standards.
Public Safety Areas		
PO2 Development does not increase the risk to public safety.	AO2.1 Development within a public safety area does not involve: (a) A significant increase in the number of people living, working or congregating in the area;	**AO2.1 – Not Applicable** Proposed development is not within a public safety area.

Performance Outcomes	Acceptable Outcomes	Development Response
	(b) The manufacture, use or storage of flammable, explosive, hazardous or noxious materials.	
Wildlife Hazards		
PO3 Development does not cause wildlife to create a safety hazard for air traffic using the airport.	AO3.1 Development located within the bird and bat strike zone does not involve uses listed in Column 1 of Table 8.2.1.3 – 2: Land uses associated with increases in wildlife strikes and hazards. AO3.2 Development located within the bird and bat strike zone involving a use listed in Column 2 of Table 8.2.1.3- 2: Land uses associated with increases in wildlife strikes and hazards, includes measures to reduce the potential to attract birds and bats.	**AO3.1 – Not Applicable** Air services is not listed as a use in Column 1 of Table 8.2.1.3-2 **AO3.2 – Not Applicable** Air services is not listed as a use in Column 2 of Table 8.2.1.3-2
Emissions		
PO3 Emissions do not significantly increase air turbulence, reduce visibility or compromise the operation of aircraft engines.	AO3.1 Development does not emit smoke ,dust, ash or steam where the airport operations can be adversely impacted. AO3.2 Development does not emit a gaseous plume at a velocity exceeding 4.3m per second where the airport operations can be adversely impacted.	**AO3.1 – Complies** The proposed development will not produce significant smoke, dust, ash or steam emissions which would impact airport operations. **AO3.1 – Complies** The proposed development will not emit any gaseous plumes.
Airport Operations		
PO4 Development must not compromise the safe operation of the airport environs and does not involve a sensitive land use where likely to be adversely impacted by noise from Airport operations.	AO4.1 A sensitive land use is preferably not located in the Airport environs overlay area or if this unavoidable then it is acoustically insulated to the applicable standards required by AS 2021- Acoustics-Airport Noise Intrusion – Building Siting and Construction.	**AO4.1 – Not Applicable** The proposed development is not considered a sensitive land use.
Light Intensity		

Performance Outcomes	Acceptable Outcomes	Development Response
PO5 Development does not include external lighting or reflective surfaces that could distract or confuse pilots or adversely interfere with other general airport operations .	AO5.1 Development ensures that outdoor lighting complies with the standards specified in the Civil Aviation Safety Authority guideline Chapter 12—Aerodrome lighting, 1.2 Lighting in the vicinity of an aerodrome.	AO5.1 – Complies Detailed design of lighting for the proposed development will comply with Civil Aviation Safety Authority guideline Chapter 12—Aerodrome lighting, 1.2 Lighting in the vicinity of an aerodrome.

Bushfire hazard overlay code

Performance Outcomes	Acceptable Outcomes	Development Response
Siting and design of development		
PO1 Development maintains the safety of people and property by avoiding land within a bushfire hazard area (bushfire prone area).	AO1.1 Development is located on land that is not subject to land within a bushfire hazard area (bushfire prone area). OR AO1.2 Where development is located on land within a bushfire hazard area (bushfire prone area) (except for single dwellings on existing lots), it must comply with a Bushfire Management Plan1 prepared for the premises.	**AO1.1 Complies** The proposed development will comply with the existing Bushfire Management Plan for the Cloncurry Airport site.
PO2 A vulnerable use is not established or materially intensified within a bushfire hazard area (bushfire prone area) unless there is an overriding need or other exceptional circumstances. Note: Vulnerable uses are those involving: (1) the accommodation or congregation of vulnerable sectors of the community such as child care centres, community care centre, educational establishments, detention facilities, hospitals, rooming accommodation, retirement facilities or residential care facilities; or (2) the provision of essential services including community uses, emergency services, utility installation, telecommunications facility, substations and major electricity infrastructure.	AO2.1 Vulnerable uses are not established or expanded.	**AO2.1 Not Applicable** Air services is not considered a vulnerable use

Performance Outcomes	Acceptable Outcomes	Development Response
PO3 Where reconfiguration of a lot is undertaken a formed, all weather access fire trail is provided between the hazardous vegetation and either the lot boundary or building envelope, and is readily accessible at all times for the type of fire fighting vehicles servicing the area. Editor's Note: A fire trail will not be required where it would not serve a practical fire management purpose.	AO3.1 Lot boundaries are separated from hazardous vegetation by a public road or fire trail which has: (1) a reserve or easement width of at least 20m; (2) a minimum trafficable (cleared and formed) width of 4m capable of accommodating a 15 tonne vehicle and which is at least 6m clear of vegetation; (3) no cut or fill embankments or retaining walls adjacent to the 4m wide trafficable path; (4) a minimum of 4.8m vertical clearance; (5) turning areas for fire-fighting appliances in accordance with Qld Fire and Emergency Services' Fire Hydrant and Vehicle Access Guidelines; (6) a maximum gradient of 12.5%; (7) a cross fall of no greater than 10 degrees; (8) drainage and erosion control devices in accordance with the standards prescribed in a planning scheme policy; (9) vehicular access at each end which is connected to the public road network; (10) designated fire trail signage; (11) if used, has gates locked with a system authorised by Qld Fire and Emergency Services; and (12) if a fire trail, has an access easement that is granted in favour of council and Qld Fire and Emergency Services.	**AO3.1 Not Applicable** The proposal does not involve reconfiguration of a lot.
PO4 Where material change of use occurs the development is located and designed to ensure proposed buildings or building envelopes achieve a radiant heat flux level at any point on the building or envelope respectively, of:	PO4.1 Buildings or building envelopes are separated from hazardous vegetation by a distance that: (1) achieves a radiant heat flux level of at any point on the building or envelope respectively, of 10kW/m2 for a vulnerable use or 29kW/m2 otherwise; and (2) is contained wholly within the development site.	AO4.1 Complies Proposed are located approximately 130m from hazardous vegetation.

Performance Outcomes	Acceptable Outcomes	Development Response
(1) 10kW/m2 where involving a vulnerable use; or (2) 29kW/m2 otherwise. The radiant heat flux level is achieved by separation unless this is not practically achievable. Editor's note: The radiant heat levels and separation distances are to be established in accordance with method 2 set out in AS3959-2009.	Editor's note: Where a separation distance is proposed to be achieved by utilising existing cleared developed areas external to the site, certainty must be established (through tenure or other means) that the land will remain cleared of hazardous vegetation. For staged developments, temporary separation distances, perimeter roads or fire trails may be absorbed as part of subsequent stages. Editor's note: The achievement of a cleared separation distance may not be achievable where other provisions within the planning scheme require protection of certain ecological, slope, visual or character features or functions.	
Emergency evacuation access		
PO5 For development that will result in multiple buildings or lots, roads and access are designed to mitigate against bushfire hazard by ensuring adequate routes for: (a) fire fighting and other emergency vehicles; and (b) the evacuation of people in the event of an emergency.	AO5.1 Residential lots are designed so that their size and shape allow for efficient emergency access to buildings for fire-fighting appliances (e.g. by avoiding long narrow lots with long access drives to buildings). AO5.2 Firebreaks are provided by a perimeter road that: (a) separates lots from areas of bushfire hazard; (b) has a minimum cleared width of 20 metres; (c) has a formed road width of 4m; and (d) complies with road standards as outlined in PSP3 Operational Works and Services. AO5.3 Fire maintenance trails are located as close as possible to the boundaries of the lots and the adjoining bushland hazard, and: (a) have a minimum width of 6m;	**AO5.1-AO5.6 - Complies** The proposed development is within the potential impact buffer area. The proposed development consists of temporary and demountable buildings and one open aircraft hangar. The existing fire mitigations implemented on the airport site, including firebreaks and perimeter roads will be utilised for the purpose of this development.

Performance Outcomes	Acceptable Outcomes	Development Response
	(b) have a formed width and gradient, and erosion control devices in accordance with Section 9.4.6 – Operational works and services code; (c) have a maximum gradient of 1 in 8 (12.5%); (d) are constructed and maintained to prevent erosion, provide adequate drainage and provide continuous access for fire fighting vehicles; (e) provide passing bays and turning areas for fire-fighting appliances; and (f) are either located on public land or within an access easement that is granted in favour of Cloncurry Shire Council and the QFRS (Queensland Fire and Rescue Service). AO5.4 Vehicular access is provided along and at each end of the fire break to existing fire maintenance trails or roads. AO5.5 The development includes sufficient cleared breaks of 6m minimum width in retained bushland within the development (e.g. creek corridors and retained vegetation), to allow burning of sections and access for bushfire response. AO5.6 Where development is located on land within a bushfire hazard area (bushfire prone area) (except for single dwellings on existing lots), development complies with a Bushfire Management Plan1 for the premises.	
Hazardous materials		
PO6 Public safety and the environment are not adversely affected by the detrimental impacts of bushfire on	AO6.1 Development complies with a Bushfire Management Plan1 for the premises.	**AO6.1 Complies** The proposed development will comply with the existing bushfire management plan for the site.

Performance Outcomes	Acceptable Outcomes	Development Response
hazardous materials manufactured or stored in bulk.		
PO7 Essential services infrastructure within a site (including electricity, gas, water supply, wastewater and telecommunications), maintains its function during and immediately after bushfire events.	AO7.1 Essential services infrastructure is located on land that is not subject to land within a bushfire hazard area (bushfire prone area).	**AO7.1 Not Applicable** No essential services infrastructure changes are proposed.
Water supply		
PO8 Development provides an adequate and accessible water supply for fire-fighting purposes	AO8.1 Development involving new or existing buildings with a gross floor area greater than 50 m2 on each lot has: (a) a reliable reticulated water supply that has sufficient flow and pressure characteristics for fire fighting purposes at all times (minimum pressure and flow is 10 litres a second at 200 kPa); OR (b) an on-site water storage of not less than 5,000 litres (e.g. accessible dam or tank with fire brigade tank fittings, swimming pool) for fire fighting purposes which is: (i) fireproof; (ii) fitted with fire brigade tank fittings; (iii) accessible for fire fighting vehicles; and (iv) connected to a pump that is independent of mains electricity supply.	**AO8.1 Complies** The proposed development is located on a site with existing reticulated water supply and infrastructure suitable for fire fighting purposes.

Car parking and access code

Performance Outcomes	Acceptable Outcomes	Development Response
Car parking		
PO1 On-site car parking must be provided at levels commensurate with the demand expected for the use of the site.	AO1.1 Car parking is provided in accordance with Table 9.4.2.3-2 – car parking requirements.	**AO1.1 Complies** Car parking standard for air services per Table 9.4.2.3.2 is 1 space per 2 full time employees. The proposed development is projected to be serviced by 16 staff, creating a requirement of 8 car parking spaces. A total of 20 car parking spaces will be provided. It is noted that Table 9.4.2.3-2 includes car parking rates for lounge floor space within an air services use. The proposed development does not involve passenger services and therefore no lounge floor space is provided. On this basis, this aspect of the car parking standard for the use is not applicable. This aside, the proposed provision of 20 spaces will result in an excess of 12 car parking spaces beyond the requirement for employees.
PO2 Car parking areas must be suitable for the purpose.	AO2.1 Car parks are marked with line work. AO2.2 Car parks are signed in accordance with AS 1742.11-1999 Manual of Uniform Traffic Control Devices - Parking Controls AO2.3 Car parks are sealed with a hardstand surface. AO2.4 Car parks are designed in accordance with AS 2890-2009 Parking Facilities Set. Note: AO2.4 above does not apply to building work.	**AO2.1 Complies** The proposed car park will be line marked. **AO2.2 Complies** Signage for the car park will be in accordance with AS1742.11-1999. **AO2.3 Complies** The car parking area will be constructed using the same gravel material used for the proposed access road and finished with a spray seal. **AO2.4 Complies** Detailed design for the car park will be in accordance with AS1742.11-1999
PO3	AO3.1	**AO3.1 Not Applicable**

Performance Outcomes	Acceptable Outcomes	Development Response
Car parking areas do not detract from the amenity of the surrounding locality	Car parking areas are landscaped with a vegetated strip having a minimum width of 2m to a side or rear boundary and 3m to a road frontage.	The proposed car park is not located within proximity to existing property boundaries.
Access		
PO4 Access and on-site manoeuvring must be provided for the use.	AO4.1 Access and internal manoeuvring is provided in accordance with AS1428-2003 Design for Access and Mobility Set.	**AO4.1 Complies** Detailed design of the car park and access will be in accordance with AS1428-2003.
PO5 Access must be provided for persons with disabilities or mobility difficulties	AO5.1 Access and internal manoeuvring is provided for in accordance with AS1428-2003 Design for access and mobility set and AS/NZS 2890.6-2009 Offstreet Parking for People with Disabilities.	AO5.1 Complies Detailed design of the car park and access will be in accordance with AS1428-2003 and AS/NZS 2890.2-2009.
PO6 Appropriate access for service vehicles must be provided.	AO6.1 Access for service vehicles is provided in accordance with Table 9.4.2.3-3 and AS 2890.2-2009 Off-street Commercial Vehicle Facilities. AO6.2 Access provision allows for all service vehicles to enter and leave the site in a forward motion.	**AO6.1 Complies** Detailed design of the car park and access will be in accordance with Table 9.4.2.3-3 and AS/NZS 2890.2-2009 **AO6.2 Complies** The proposed car park has been configured to allow all service vehicles to leave the site in a forward motion.
Landscaping		
PO7 Landscaped car parking areas must be sympathetic to the local environment and utilise species native to the local area	AO7.1 No acceptable outcome prescribed.	**AO7.1 Complies** The car parking area will be in keeping with the existing landscape character of the site. No specific landscape design is proposed, due to the temporary nature of the facility and its location on airport land.
Infrastructure		
PO8 Stormwater drainage is designed to avoid impacts on the State-controlled road network.	AO8.1 No acceptable outcome prescribed.	**AO7.1 Complies** No State controlled roads are within proximity to the proposed development. No drainage impacts are anticipated on State controlled roads.

Community Facilities Zone Code

Performance Outcomes	Acceptable Outcomes	Development Response
Built form and character		
PO1 Development must be compatible in form and scale with the character of a rural regional town.	AO1.1 Building height does not exceed 12m and 3 storeys, except where development is a single detached Class 1 building or Class 10 building or structure located on the same = allotment as a single detached Class 1 building. AO1.2 Site cover does not exceed 75%, except where development is a single detached Class 1 building or Class 10 building or structure located on the same allotment as a single detached Class 1 building.	**AO1.1 Complies** Proposed building height does not exceed 7.5m. **AO1.2 Complies** Site cover does not exceed 75%.
Amenity		
PO2 Development does not generate impacts through unacceptable levels of noise, odour, dust, air emissions, light spillage or vibration that will affect adjoining or nearby sites containing existing sensitive land uses.	AO2.1 Operation of non-residential activities, adjacent to residential allotments, only occurs between the hours of 6.00 am and 10.00 pm Monday to Saturday, and 8.00 am and 6.00 pm on Sunday	**AO2.1 Not Applicable** No residential allotments adjacent to proposed development site.
PO3 Privacy of adjoining dwellings must be maintained. Overlooking is minimised through the use of design elements such as: (a) privacy screens and hoods;	AO3.1 For screening of a proposed residential use that is within 2m at ground floor level or 9m above ground floor level of an existing dwelling, windows or habitable rooms with an outlook to the windows of habitable rooms in an adjacent dwelling provide suitable screening such as:	**AO3.1 Not Applicable** There are no residential allotments adjacent to proposed development site and no residential use proposed.

Performance Outcomes	Acceptable Outcomes	Development Response
(b) limiting side boundary windows; (c) landscaping treatments.	(a) fixed obscure glazing in any part of the window below 1.5m above floor level; or (b) fixed external screens; or (c) sill heights of 1.5m above floor level; or (d) in the case of screening for a ground floor level, fencing to a height of 1.5m above ground floor level. Refer to Figure 6.2.11.3-1 for illustrated examples of screening	
PO4 The size and location of advertising devices associated with non-residential uses must not adversely affect the visual amenity of a locality.	AO4.1 Advertising devices are located and constructed to comply with section 9.4.1- Advertising devices code.	AO4.1 Complies Advertising devices will comply with the Advertising devices code.
Landscaping		
PO5 Landscaping must enhance the amenity and streetscape of the locality.	AO5.1 Development provides for a minimum of 10% of the site to be landscaped. AO5.2 A 1.8m high solid screen fence and 1.5m wide strip of screen landscaping are provided along all boundaries shared with an adjoining residential use	**AO5.1 Alternate solution** Due to the established nature of the Cloncurry Airport on site, and the temporary nature of the built form proposed, it is considered that maintaining the current landscape character of the site is appropriate. **AO5.2 Not Applicable** There are no adjoining residential uses.
Open Space for a Residential Use in the Community Facilities Zone		
PO6 Private open space and recreation areas must be of suitable size and configuration and easily accessible from the main habitable rooms of the dwelling.	AO6.1 A minimum of 30% of the site is provided as private open space and recreation areas. AO6.2 Private open space and recreation areas include an area having a minimum dimension of 5m x 5m.	**AO6.1 and AO6.2 Not Applicable** No residential use proposed.
Infrastructure and Servicing		

Performance Outcomes	Acceptable Outcomes	Development Response
PO7 Adequate area for the storage of waste disposal must be provided.	AO7.1 Waste disposal areas: (a) are screened from any street frontage and adjoining properties with a fence with a minimum height of 1.8m; (b) have an impervious area; (c) are located within the vicinity of a hose cock for cleaning purposes.	AO7.1 Complies Detailed design of the proposed development will ensure that a waste disposal area is provide on an impervious surface with access to a water connection for cleaning purposes.
For assessable development only		
Uses		
PO8 Development contributes to achieving a diverse range of uses in the community facilities zone, that provide for community related activities and facilities whether under public or private ownership.	AO8.1 Uses which are identified as being inconsistent with the purpose of the zone and identified in Table 6.2.2.3-2 are not established or preferred in the Community facilities zone. Note: Indicates a policy position that the nature and operational characteristics of the use and its potential impacts are inappropriate and will not satisfy the overall outcomes for the zone.	**AO8.1 Not Applicable** Air services is not listed as an inconsistent use
Built form and building envelope		
PO9 All buildings and structures shall be setback from the road alignment a sufficient distance and be commensurate with the setbacks that are predominant in the area. Development provides for adequate: (a) access to natural light and ventilation; (b) privacy; (c) noise attenuation;	AO9.1 No acceptable outcome prescribed.	**AO9.1 Not Applicable** The proposed development is not in close proximity to Sir Hudson Fysh Drive and will in fact be located to the north of existing hangars which are located closer to the road.

Performance Outcomes	Acceptable Outcomes	Development Response
(d) landscaping; (e) outlook; and (f) off-street parking.		
PO10 Development is sited having regard to the safety of people using the site and the adjoining site, the amenity enjoyed by those people, and the maintenance of buildings and work	AO10.1 No acceptable outcome prescribed.	**AO10.1 Complies** The proposed development has been sited with regard to the existing Cloncurry Airport to maintain the safety and security of the site and all of its users.
Infrastructure and servicing		
PO11 Development must be suitably serviced with adequate water supply, sewage treatment, drainage, power supply and telecommunication facilities.	AO11.1 Provision and design of water supply, sewerage and roads are constructed to standards in Section 9.4.6 – Operational works and services code.	**AO11.1 Complies** The site will be connected to all available reticulated services in accordance with relevant standards.
Environment		
PO12 The development responds sensitively to on-site and surrounding topography, drainage systems, utility service and vegetation, through: (a) any earthworks and retaining structures being minimised; (b) the retention of natural drainage lines being maximised; (c) the retention of existing vegetation being maximised where practical;	AO12.1 No acceptable outcome prescribed.	**AO12.1 Complies** The proposed development has been sited and designed to ensure minimal disturbance of the surrounding environment, aiming to retain natural features of the site where possible and avoid disruption of existing infrastructure.

Performance Outcomes	Acceptable Outcomes	Development Response
(d) avoiding damage or disruption to urban utility services; (e) adequate buffering to protect the ecological functions of wetlands and waterways.		

Earthworks code

Performance Outcomes	Acceptable Outcomes	Development Response
PO1 Earthworks (filling and excavation) result in stable landforms and structures.	AO1.1 Earthworks are undertaken in accordance with PSP3 Operational Works and Services.	**AO1.1 Complies** Detailed design for earthworks will be undertaken in accordance with PSP3 Operational Works and Services.
PO2 Earthworks do not result in contamination of land or water and avoids risk to people and property.	AO2.1 Earthworks are undertaken in accordance with PSP3 Operational Works and Services.	**AO2.1 Complies** Detailed design for earthworks will be undertaken in accordance with PSP3 Operational Works and Services.
PO3 Earthworks must not result in an adverse impact on water quality within the surrounding environment.	AO3.1 Erosion and sediment control measures are employed during works to prevent run-off in accordance with the Soil Erosion and Sediment Control Guidelines for Queensland and the Queensland Urban Drainage Manual (QUDM)	**AO3.1 Complies** Detailed design for earthworks will be undertaken in accordance with Soil Erosion and Sediment Control Guidelines for Queensland and the Queensland Urban Drainage Manual (QUDM).
PO4 Earthworks must not result in ponding or changes to the flooding or drainage on site or on adjoining properties.	AO4.1 Earthworks are undertaken in accordance with PSP3 Operational Works and Services	**AO4.1 Complies** Detailed design for earthworks will be undertaken in accordance with PSP3 Operational Works and Services.
PO5 Earthworks must not result in adverse impacts on the amenity of the surrounding environment or prevent or create difficult access to the site	AO5.1 Earthworks are undertaken in accordance with PSP3 Operational Works and Services.	**AO5.1 Complies** Detailed design for earthworks will be undertaken in accordance with PSP3 Operational Works and Services.
PO6 The transportation of material minimises adverse impacts on the road system.	AO6.1 Material is transported in accordance with PSP3 Operational Works and Services.	**AO6.1 Complies** Where necessary, approval from relevant road managers will be sought for any over dimensional loads. Given the scale of the facility it is not expected that transport of material will affect the function of the road system.

Flood hazard overlay code

Performance Outcomes	Acceptable Outcomes	Development Response
Siting and design of development		
PO1 Development siting and layout responds to flooding potential and maintains personal safety at all times	AO1.1 A developable area is available within the site that is at least 300mm freeboard above the defined flood event (DFE) i.e. 1%AEP, with sufficient space to accommodate the likely population of the development in safety for a relatively short time until flash flooding subsides or people can be evacuated. Note: a flood study report prepared by a suitably qualified engineer should be provided, demonstrating the achievement of a developable area that is at a level of at least 300mm above the 1% AEP. **For Material Change of Use** AO1.2 New buildings are: (a) not located within the overlay area; or (b) located on the highest part of the site to minimise entrance of floodwaters; or (c) elevated above the DFE; that is for example raised above ground level on stumps; and (d) provided with clear and directed pedestrian and vehicle evacuation routes off the site that remains passable for emergency evacuations during all floods. Note: If part of the site is outside the Flood hazard overlay area, this is the preferred location for all buildings, provided flood free access to this part of the site can also be maintained at all times. **For Reconfiguring a lot** AO1.3 New lots are:	**AO1.1 - Complies** The proposed development will be collocated in proximity to the existing Cloncurry Airport, providing refuge should a flood event occur. **AO1.2 – Complies** Detailed design will ensure that habitable buildings, including workspaces, will be elevated above the DFE and provided with clear pedestrian an vehicle evacuation routes. **AO1.3 Not Applicable** No reconfiguration of a lot is proposed

Performance Outcomes	Acceptable Outcomes	Development Response
	(a) located outside the overlay area; and (b) provided with clear and directed pedestrian and vehicle evacuation routes off the site that remains passable for emergency evacuations during all floods. Note: If part of the site is outside the Flood hazard overlay area, this is the preferred location for all lots (excluding park or other relevant open space and recreation lots), provided flood free access can be maintained to each lot at all times. Note: Buildings subsequently developed on the lots created w ill need to comply with the relevant building assessment provisions under the Building Act 1975.	
PO2 Development is resilient to flood events by ensuring design and built form account for the potential risks of flooding.	**For material change of use (residential uses)** AO2.1 Residential dwellings are not designed as single storey slab on ground and only non habitable rooms such as garages and laundries are located on the ground floor. Note: The highset “Queenslander” style house is a resilient low - density housing solution in floodplain areas. Higher density residential developments should ensure only non-habitable rooms (e.g. garages, laundries) are located on the ground floor. AO2.2 Residential buildings: (a) use screening to ensure that the understorey is not visible from the street; and (b) orient to the street by ensuring that the stairs to the dwelling and at least one habitable room overlook the street; and (c) have ground floors that allow for the flow through of flood water. Note: The highset “Queenslander” style house is a resilient low - density housing solution in	**AO2.1 Not Applicable** No residential use is proposed. **AO2.2 Not Applicable** No residential use is proposed. **AO2.3 Complies** The proposed development is located to the north of existing hangars which are located along the nearest road frontage. Appropriate contingency plans will be developed by the site operator in the event of a forecast flood event. (a)

Performance Outcomes	Acceptable Outcomes	Development Response
	floodplain areas. Higher density residential developments should ensure only non-habitable rooms (e.g. garages, laundries) are located on the ground floor. **For material change of use (non-residential uses)** AO2.3 Non-residential buildings and structures: (a) orient to the street by activating the street frontage through ground floor commercial uses or urban design treatments such as recess wall treatments, screening and/or landscaping; and (b) allow for flow through of flood waters on the ground floor. Note: Businesses should ensure that they have the necessary continuity plans in place to account for the potential need to relocate property prior to a flood event (e.g. allow enough time to transfer stock to the upstairs level of a building or off site). Note: The relevant building assessment provisions under the Building Act 1975 apply to all building work within the Flood hazard overlay area and must take account of the flood potential within the area. Note: Resilient building materials for use within the Flood hazard overlay area should be determined in consultation with Council, in accordance with the relevant building assessment provisions	
Flood storage and conveyance		
PO3 Development directly, indirectly and cumulatively avoids any change to the flood characteristics of the area, taking into account:	AO3.1 Works in urban areas associated with the proposed development do not involve: (a) any physical alteration to a watercourse or floodway including vegetation clearing; or (b) a net increase in filling (including berms).	**AO3.1 Complies** a) No physical alterations to watercourses or floodways are proposed b) No net increase in filling is proposed **AO3.2 Not Applicable**

Performance Outcomes	Acceptable Outcomes	Development Response
(a) loss of flood storage; (b) loss of or changes to flow paths; (c) acceleration or retardation of flows; (d) increase in the depth or duration of flood waters; (e) any reduction in flood warning times elsewhere on the floodplain; and (f) damage as a result of flood on and off site	Note: Berms are considered to be an undesirable built form outcome and are not supported. AO3.2 Works in rural areas either: (a) do not involve a net increase in filling greater than 50m3; or (b) do not change the flood characteristics outside the subject site in ways that result in: i. loss of flood storage; ii. loss of or changes to flow paths; iii. acceleration or retardation of flows; or iv. any reduction in flood warning times elsewhere on the floodplain.	
Access		
PO4 Development is sited to provide a safe vehicular access for evacuation in the event of a flood.	AO4.1 A least one road and/or accessway provides a safe and clear evacuation route and direct simple routes to main carriageways during all flooding and flooding events up to and including the DFE (1% AEP).	**AO4.1 Complies** An access road is included within the proposed project extents, connecting to main carriageways (connecting to Sir Hudson Fysh Drive and Ernst Henry Rd beyond).
Hazardous materials		
PO5 Public safety and the environment are not adversely affected by the detrimental impacts of floodwater on hazardous materials manufactured or stored in bulk.	**For material change of use** AO5.1 Materials manufactured or stored on site are not hazardous in nature; OR AO5.2 The manufacture or storage in bulk of hazardous materials takes place above the DFE (1%AEP) of the site to enhance flood immunity; OR AO5.3	**AO5.1-AO5.3 Complies** Some fuel storage may be undertaken on site, for the purpose of fueling drones. Detailed design will ensure that any fuel storage on site will comply with the provisions outlined inAO5.2 and AO5.3

Performance Outcomes	Acceptable Outcomes	Development Response
	Structures used for the manufacture or storage of hazardous materials in bulk are designed to prevent the intrusion of floodwaters. Note: Refer to the Dangerous Goods Safety Management Act 2001 and associated Regulation, the Environmental Protection Act 1994 and the relevant building assessment provisions under the Building Act 1975 for requirements related to the manufacture and storage of hazardous substances.	
Community infrastructure and essential services		
PO6 Essential services infrastructure within a site (including electricity, gas, water supply, wastewater and telecommunications) maintains its function immediately after flood events.	AO6.1 Any components of the infrastructure that are likely to fail to function or may result in contamination when inundated by flood water (e.g. electrical switchgear and motors, water supply pipeline air valves) are designed and constructed to avoid floodwater intrusion/infiltration. AO6.2 Substations in flood prone areas ensure that the sensitive electrical equipment on site (e.g. transformers, control cabinets, neutral earth reactors and switch gear) are located 300mm above 1% AEP flood levels. Note: A flood study report prepared by a suitably qualified engineer may need to be provided, demonstrating the achievement of this requirement. AO6.3 Development for any of the uses identified in column 1 of Table 8.2.3.2-2 - Minimum flood levels is located above the flood level specified in column 2 of Table 8.2.3.2-2 - Minimum flood levels.	**AO6.1 Complies** No changes to essential infrastructure services are proposed. **AO6.2 Not Applicable** No substation proposed **AO6.3 Not Applicable** Air services is not listed in Column 1 of Table 8.2.3.2-2

Performance Outcomes	Acceptable Outcomes	Development Response
	Note: A flood study report prepared by a suitably qualified engineer may need to be provided, demonstrating the achievement of this requirement.	
PO7 Community infrastructure: (a) is able to function effectively and safe access is provided to and from the infrastructure during and immediately after flood events; or (b) is protected from flooding due to its historical or cultural significance.	**For material change of use** AO7.1 Community infrastructure is not located in an area below the DFE (1% AEP) within the Flood hazard overlay and has at least one road access that will remain trafficable for the performance of emergency evacuations for all floods up to and including the DFE (1% AEP)	**AO7.1 Not Applicable** No community infrastructure proposed.

Integrated water cycle management code

Performance Outcomes	Acceptable Outcomes	Development Response
Stormwater management		
PO1 Development does not adversely impact on the quality of receiving waters by avoiding or minimising pollutants entering and being transported with stormwater.	AO1.1 Stormwater quality treatment measures are implemented in accordance with PSP3 Operational Works and Services. AO1.2 Pollutant load reductions are achieved in accordance with PSP3 Operational Works and Services. See note* Note - Environmental values and water quality objectives are established pursuant to Environment Protection Policy (Water). Reference should also be made to the Urban stormw ater quality management guidelines 2010	**AO1.1 Complies** Detailed design will consider the requirements outlined in PSP3 Operational Works and Services. **AO1.2 Complies** Detailed design will consider the requirements outlined in PSP3 Operational Works and Services
PO2 Adverse impacts of construction activities on stormwater quality are avoided where feasible. If not feasibly avoided, impacts are minimised using best practice environmental management for erosion and sediment control.	AO2.1 Sediment and erosion control measures are implemented in accordance with PSP3 Operational Works and Services.	**AO2.1 Complies** Detailed design will consider the requirements outlined in PSP3 Operational Works and Services.
PO3 Stormwater management incorporates water sensitive urban design techniques and avoids adverse impacts from water quantity, flow rates and duration and frequency in receiving waters, having regard to: (a) channel, bed and bank stability; (b) aquatic and riparian ecosystems; and	AO3.1 Stormwater flow control measures are implemented in accordance with PSP3 Operational Works and Services.	**AO3.1 Complies** Detailed design will consider the requirements outlined in PSP3 Operational Works and Services.

Performance Outcomes	Acceptable Outcomes	Development Response
(c) hydrological functions		
Waste water management		
PO4 Development does not discharge wastewater to a waterway or external to the site unless demonstrated to be best practice environmental management for that site and has appropriate regard for: (a) cumulative effects; (b) the applicable water quality objectives for the receiving waters; (c) adverse impact on ecosystem health of receiving waters; and (d) in waters mapped as being of high ecological value, the adverse impacts of such releases and their offset	AO4.1 Waste water management measures are implemented in accordance with PSP3 Operational Works and Services.	**AO4.1 Complies** Wastewater is stored and taken off site for disposal with no discharge on site or additional volume added to the existing wastewater system
Artificial Waterways and Water Bodies		
PO5 The waterway or water body is designed to integrate multiple functions, including: (a) aesthetics, landscaping, and recreation; (b) flood management; (c) stormwater management; (d) water conservation and reuse; (e) community health; and (f) pest management.	AO5.1 Artificial waterways or water bodies are designed in accordance with PSP3 Operational Works and Services	**AO5.1 Not Applicable** No artificial waterways or water bodies are proposed.
PO6	AO6.1	**AO5.1 Not Applicable** No artificial waterways or water bodies are proposed.

Performance Outcomes	Acceptable Outcomes	Development Response
The waterway is located and designed to be responsive to natural drainage features.	Artificial waterways or water bodies are designed in accordance with PSP3 Operational Works and Services.	
PO7 The waterway or body is designed to minimise whole of life cycle costs	AO7.1 Artificial waterways or water bodies are designed in accordance with PSP3 Operational Works and Services.	**AO5.1 Not Applicable** No artificial waterways or water bodies are proposed.
Flooding and drainage		
PO8 Flooding and drainage characteristics upstream or downstream of the site are not worsened.	AO8.1 Development is undertaken in accordance with PSP3 Operational Works and Services.	**AO8.1 Complies** Detailed design will consider the requirements outlined in PSP3 Operational Works and Services
PO9 The drainage network has sufficient capacity to safely convey stormwater run-off from the site	AO9.1 Development is undertaken in accordance with PSP3 Operational Works and Services.	**AO8.1 Complies** Detailed design will consider the requirements outlined in PSP3 Operational Works and Services
PO10 Stormwater resulting from roofed areas is collected and discharged in a manner that does not adversely affect the stability of buildings or the use of adjacent land	AO10.1 Roof water is collected and discharged in accordance with PSP3 Operational Works and Services.	**AO10.1 Complies** Roof water collection and discharged will be included within the stormwater management plan for the site, reflecting PSP3.
Water cycle management		
PO11 The design and management of the development integrates water cycle elements so that: (a) water is used efficiently and potable water demand is reduced; (b) wastewater production is minimised; (c) stormwater peak discharges and runoff volumes are not worsened;	AO11.1 Integrated water management practices and infrastructure are implemented in accordance with PSP3 Operational Works and Services.	**AO11.1 Complies** Detailed design of integrated water management practices and infrastructure for the proposed development will reflect PSP3 Operational Works and Services where applicable.

Performance Outcomes	Acceptable Outcomes	Development Response
(d) natural drainage lines and hydrological regimes are maintained as far as possible; (e) large, uninterrupted impervious surfaces are minimised; (f) reuse of stormwater and grey-water is encouraged where public health and safety will not be compromised; and (g) water is used efficiently		

Landscaping code

Performance Outcomes	Acceptable Outcomes	Development Response
Landscape design		
PO1 Landscaping contributes to the amenity and appearance of the development and the character of the region.	AO1.1 Landscape buffer strips are provided in accordance with the applicable code and the design incorporates: (a) endemic or other native species as provided in PSP3 Operational Works and Services; (b) planting with a size maturity that: a. in the case of street trees, grows to a minimum height of 7m, except under power lines; and b. in the case of trees on other land, grows to a minimum height of at least 75% of the height of the largest structure on the allotment; (c) all ground surfaces not covered by paving are covered by a groundcover; and (d) water reticulation for landscape maintenance. AO1.2 Planting for landscape buffers is at the following minimum densities: (a) large trees, at 8m centres; (b) small trees, at 3m centres; (c) shrubs, at 1.5m centres; or (d) groundcover, at 0.5-1m centres	**AO1.1-AO1.2 Complies** The current landscape character of the site will be maintained.
Planting standards		
PO2 Landscape planting is installed at an appropriate standard and adequately established and maintained.	AO2.1 Minimum plant stock sizes are: (a) street and feature trees, 45 litre bags; (b) other trees, 25 litre bags; (c) shrubs, 200mm pot; or (d) groundcover, 140mm pot.	**AO2.1-AO2.3 - Alternate solution** Due to the temporary nature of buildings on site, undertaking significant planting is not proposed. The landscape character of the site will be maintained.

Performance Outcomes	Acceptable Outcomes	Development Response
	AO2.2 The required spacing for trees, shrubs and groundcovers are: (a) trees higher than 10m at maturity, 8-10m spacing; (b) trees between 5m and 10m high at maturity, 5-8m spacing; (c) shrubs higher than 1.5m at maturity, 1-2m spacing; or (d) groundcover other than grass, 0.5-1m spacing. AO2.3 Landscaping is installed and established in accordance with PSP3 Operational Works and Services.	
Landscaping principles		
PO3 Development is to have an area of the site appropriately landscaped to enhance its appearance and provide an adequate level of amenity for occupants and adjoining land uses.	AO3.1 For residential development other than a dwelling house, landscaping is to include: (a) a minimum of 1 tree for every 15m of site perimeter; (b) shrubs of sufficient height and size at maturity are placed so as to completely screen blank walls, sheds, plant and machinery, refuse storage areas and similar elements of the development; (c) low shrubs and groundcover provide complete coverage of unsealed surfaces; and (d) at least 10% of the area of the site is landscaped in such a way that the full effect of the landscaping is visible from the street. AO3.2 For non-residential development, landscaping includes:	**AO3.1 Not Applicable** No residential development proposed **AO3.2 Alternate solution** Due to the temporary nature of buildings on site undertaking significant planting is not proposed. The landscape character of the site will be maintained.

Performance Outcomes	Acceptable Outcomes	Development Response
	(a) large trees that achieve a canopy spread at maturity over a minimum of 40% of the perimeter of the site; (b) at least 25% of trees that achieve a height at maturity above the level of the building parapet or eaves; (c) spreading trees and shrubs to maximise the screening effect of vegetation; (d) one (1) spreading canopy tree with mulched surrounds and groundcover for every 6 car parking spaces; and (e) at least 10% of the area of the site is landscaped in such a way that the full effect of the landscaping is visible from the street	
Restoration of disturbed areas		
PO4 Ground surfaces which are disturbed by construction activities are restored to at least their original condition.	AO4.1 Where the surface of the ground is disturbed by construction activities and is not subsequently covered by a building, paving or other landscaping, the surface is to be restored to its original condition by: (a) stockpiling and respreading the original topsoil; (b) planting the affected area with species to match the original plant cover; (c) maintaining the plants until they are established; and (d) if the original vegetation required maintenance, on-going maintenance to the new plants to promote health and vigorous growth.	**AO4.1 Complies** The site will be returned to its original condition where ground surface disturbance occurs.
Access and safety		
PO5 Landscaping enhances access and personal safety.	AO5.1 Paved surfaces are slip-resistant, stable and trafficable in all weather conditions. AO5.2 Landscape design complies with AS1428-2003 Design for Access and Mobility Set.	**AO5.1 Complies** Paved areas will comply with all relevant safety standards. **AO5.2 Complies** Any landscaping provided on site will comply with the relevant access and mobility standards.

Performance Outcomes	Acceptable Outcomes	Development Response
	AO5.3 Landscaping does not obstruct visibility within parks, playgrounds, pathways and vehicle parking areas. AO5.4 Trees with a clear trunk height at maturity of at least 1.8m and groundcover with a maximum height of 0.3m are used in landscaping along street footpaths, pathways, vehicle parking areas, street corners and street lighting.	**AO5.3 Complies** Landscaping will not obstruct visibility of vehicle parking areas. **AO5.4 Not Applicable**
Landscape buffers		
PO6 Appropriately designed landscape buffers are provided between incompatible uses for visual screening and noise attention.	AO6.1 Where landscaped buffer strips are required by an applicable code, a combination of the following elements is incorporated or provided: (a) earth mounding; or (b) screen fencing of durable materials and constructions; or (c) planting with dense foliage which extends to the ground; or (d) low dense plants and high-branching taller trees to screen larger buildings or objects. AO6.2 Planting for landscape buffers is at the following minimum densities: (a) large trees, 8m centres; (b) small trees, 3m centres; (c) shrubs, 1.5m centres; and (d) groundcover, 0.5-1m centres	**AO6.1 Not Applicable** No landscape buffer strips required. **AO6.2 NA**

Operational works and services code

Performance Outcomes	Acceptable Outcomes	Development Response
Infrastructure services		
For development in the General residential, Township, Centre, Low impact industry, Medium impact industry or High impact industry zone		
PO1 Each allotment is to be provided with connection to the following services: (a) reticulated sewerage; (b) reticulated water supply; (c) stormwater drainage; (d) a new/existing road; (e) reticulated electricity supply; and (f) telecommunication services; that is adequate for the current and future needs of the intended use and approved and installed in accordance with the requirements of the relevant regulatory authority.	AO1.1 Infrastructure is provided in accordance with PSP3 Operational Works and Services. AO1.2 Premises are connected to an electricity supply approved by the relevant regulatory authority. AO1.3 The development is connected to telecommunications infrastructure in accordance with the standards of the relevant regulatory authority.	**AO1.1 Not Applicable** Proposed development is within the Community Facilities Zone. **AO1.2 Not Applicable** Proposed development is within the Community Facilities Zone. **AO1.3 Not Applicable** Proposed development is within the Community Facilities Zone.
PO2 A system of stormwater drainage is to be provided which services all land affected by runoff from the site of development.	AO2.1 Infrastructure is provided in accordance with the need to service development, having regard to: (a) the location of the development; and (b) any standard or requirement identified within the Operational works and services code, PSP3 Operational Works and Services, and any other relevant code or provision within the planning scheme.	**AO2.1 Not Applicable** Proposed development is within the Community Facilities Zone.
PO3 Street lighting and signage is to be provided to ensure the safety of vehicles, cycles and pedestrians with respect to access and movement	AO3.1 Infrastructure is provided in accordance with the need to service development, having regard to: (a) the location of the development; and (b) any standard or requirement identified within the Operational works and services code, PSP3 Operational Works and Services, and any other relevant code or provision within the planning scheme.	**AO3.1 Not Applicable** Proposed development is within the Community Facilities Zone.

Performance Outcomes	Acceptable Outcomes	Development Response
For development in the Rural residential zone		
PO4 Each allotment is to be provided with connection to the following services: (a) on-site effluent disposal system2 ; (b) potable water supply3 ; (c) a new/existing road; (d) stormwater drainage; (e) reticulated electricity supply; and (f) telecommunication services. 2 Plumbing and Drainage Act 2002 (on-site sewerage code) 3 Note – w here bore water is supplied, each bore is pump tested in accordance with AS2368-1990 for quantity and quality purposes.	AO4.1 Infrastructure is provided in accordance with PSP3 Operational Works and Services.	**AO4.1 Not Applicable** Proposed development is within the Community Facilities Zone.
For development in the Rural zone		
PO5 Each allotment is to be provided with connection to the following services: (a) potable water supply4 ; and (b) a new/existing road. 4Note – w here bore water is supplied, each bore is pump tested in accordance with AS2368-1990 for quantity and quality purposes	AO5.1 Infrastructure is provided in accordance with PSP3 Operational Works and Services.	**AO5.1 Not Applicable** Proposed development is within the Community Facilities Zone.
PO6 Infrastructure services are designed and constructed so that there is adequate:	AO6.1 Infrastructure is provided in accordance with PSP3 Operational Works and Services.	**AO6.1 Not Applicable** Proposed development is within the Community Facilities Zone.

Performance Outcomes	Acceptable Outcomes	Development Response
(a) sewerage or on-site wastewater disposal; (b) water supply; (c) provision for solid waste collection; (d) electricity supply; (e) telecommunications services; and (f) street lighting and signs.		
PO7 The location and construction of infrastructure should have regard to the following: (a) the nature and location of the development; (b) suitable materials should be used for construction that are durable, easy to maintain, and cost effective taking into account whole of life cycle costs; and (c) best practice environmental management and energy saving.	AO7.1 Infrastructure is provided in accordance with PSP3 Operational Works and Services.	**AO7.1 Not Applicable** Proposed development is within the Community Facilities Zone.
Road design and construction		
PO8 Roads are designed and constructed to support their specified function and their alignment provides for safe and efficient movement of traffic.	AO8.1 Roads are designed and constructed in accordance with PSP3 Operational Works and Services.	**AO8.1 Not Applicable** No gazetted roads are proposed for the proposed development. An access road of unsealed gravel will be connected to the existing dirt road.
PO9 Road pavement surfaces: (a) are durable enough to carry estimated wheel loads of travelling and parked vehicles; and (b) provide for the safe passage of vehicles, pedestrians and cyclists, and discharge of stormwater run-off	AO9.1 Roads and associated earthworks are undertaken in accordance with PSP3 Operational Works and Services.	**AO9.1 Not Applicable** No paved roads are proposed.

Performance Outcomes	Acceptable Outcomes	Development Response
from contributing catchments and the preservation of all-weather access.		
PO10 Kerb and channel is provided to ensure vehicle movements are controlled by delineating the carriageway for all users and pavement runoff is conveyed to stormwater drainage infrastructure.	AO10.1 Roads are designed and constructed in accordance with PSP3 Operational Works and Services.	**AO10.1 Not Applicable** No paved roads are proposed.
PO11 Verges and footpaths provide: (a) safe access for pedestrians clear of obstructions; (b) an access area for vehicles onto properties; (c) a corridor allocated for public utilities; and (d) additional amenity for minor roads.	AO11.1 Roads are designed and constructed in accordance with PSP3 Operational Works and Services	**AO11.1 Not Applicable** No gazetted or formal roads are proposed.
Stormwater drainage		
PO12 Stormwater drainage systems or networks have the capacity to control the quantity and quality of stormwater flows so that: (a) overland runoff is directed to areas where there is not damage to property or hazards for motorists; (b) runoff is directed to a lawful point of discharge through controlled outlet structures; and (c) development retains the existing hydrological regime (surface and groundwater cycle and flow) to protect vegetation and habitats in and adjoining watercourses.	AO12.1 Stormwater drainage is to be designed and constructed in accordance with PSP3 Operational Works and Services	**AO12.1 Complies** Detailed design will consider the requirements of PSP3

Performance Outcomes	Acceptable Outcomes	Development Response
Works over or near infrastructure services		
PO13 Building or operational works near or over the Council's sewerage, water and stormwater drainage infrastructure must: (a) protect the infrastructure from physical damage; and (b) allow ongoing necessary access for maintenance purposes.	AO13.1 Building and operational work near or over the Council's sewerage, water and stormwater drainage infrastructure is to comply with PSP3 Operational Works and Services	**AO13.1 Complies** Detailed design will consider the requirements of PSP3
Protection against natural hazards		
PO14 Essential services maintain their function during the occurrence of natural hazards, including flooding, bushfire and landslides.	AO14.1 Components of the systems which deliver electricity supply, gas supply, water supply, sewerage and telecommunication services and which will be adversely affected by the inundation by infiltration of floodwater are to be: (a) Located above the level of the 100 year ARI flood; or (b) Designed and constructed to resist the hydrostatic and hydrodynamic forces which result from such inundation.	**AO14.1 Complies** Detailed design of essential services will ensure structures can resist the hydrostatic and hydrodynamic forces which result from inundation.
Location of underground services		
PO15 Underground services are located in such a way as to provide maximum flexibility for future development.	AO15.1 Any easement required for underground services is to be located parallel to and within 2m of any allotment boundary.	**AO15.1 Not Applicable** No underground services are proposed within 2m of allotment boundary.
General infrastructure		
PO16	AO16.1 No acceptable outcome prescribed.	**AO16.1 Complies**

Performance Outcomes	Acceptable Outcomes	Development Response
Infrastructure is integrated with and efficiently extends existing networks.		Infrastructure will be integrated with existing networks where required.
Stormwater and wastewater discharge		
PO17 Discharge of stormwater to a watercourse or wetland only occurs where the water has been treated prior to discharge to remove or reduce contaminants such as sediments, litter and excess nutrients (particularly nitrogen and phosphorus).	AO17.1 No acceptable outcome prescribed.	**AO17.1 Complies** No discharge of stormwater into a watercourse or wetland is proposed.
PO18 Stormwater and on-site wastewater does not contaminate ground water flows.	AO18.1 No acceptable outcome prescribed.	**AO18.1 Complies** No contamination of ground water is anticipated.

Public utility code

Performance Outcomes	Acceptable Outcomes	Development Response
Location and siting		
PO1 Underground public utilities are appropriately sited.	AO1.1 Underground services are installed to the standard alignments nominated in the PSP3 Operational Works and Services.	**AO1.1 Not Applicable** No public utilities are proposed.
PO2 The location and siting of the public utility maximises accessibility for maintenance purposes without disrupting other access or movement.	AO2.1 Public utilities are: (a) sited in locations where they can be readily accessed for maintenance purposes; and (b) easements for access are granted to the Council or the beneficiary of the easement to ensure access can be legally gained. AO2.2 Public utilities are located and installed so that they do not interfere with public access by pedestrians or vehicles on public roads. AO2.3 Where access for maintenance or servicing is required at a greater frequency than twice per week, vehicular access to the utility is gained from roads other than local residential streets to maintain residential amenity.	**AO2.1 Not Applicable** No public utilities are proposed.
PO3 Infrastructure services are designed and constructed to ensure efficiency of cost and landtake, and for minimal environmental impact.	AO3.1 Compatible infrastructure is co-located in common trenching in order to minimise the land required and the costs for underground services. AO3.2 Public utilities are located and aligned so as to; (a) avoid disturbance to areas of particular vegetation conservation value; and	**AO3.1 Complies** The proposed development has utilised existing airport wherever possible. **AO3.2 Not Applicable** No public utilities are proposed.

Performance Outcomes	Acceptable Outcomes	Development Response
	(b) avoid crossing of watercourses	
Residential amenity		
PO4 The public utility has no adverse impacts on residential amenity where located on a site: (a) within or adjacent to the General residential zone or the Rural residential zone; or (b) containing or adjacent to a residential use.	AO4.1 No acceptable outcomes prescribed.	**AO4.1 Not Applicable** No residential land uses are within proximity to the proposed development.
Visual amenity		
PO5 The public utility is appropriately sited and where practicable screened from view.	AO5.1 Public utilities are: (a) located underground; or below the level of the predominant tree canopy of surrounding sites; or (b) integrated with an existing building or structure by: (i) not involving any free standing elements; (ii) concealment as an integral part of a building or structure; (iii) not increasing the bulk and height of the building or structure of which it forms a part; or (iv) co-located with other utility facilities. AO5.2 Pipes and other conduits for utility purposes (except for electricity transmission lines) are placed underground in the General residential and Centre zones.	**AO5.1 Not Applicable** No public utilities are proposed.
Safety and security		
PO6	AO6.1	**AO6.1 Not Applicable**

Performance Outcomes	Acceptable Outcomes	Development Response
Public utilities are secure, the risk of vandalism is minimised and public safety is assured	Where not required to be publicly accessible, the public utility is fenced with security fencing.	No public utilities are proposed.

Appendix D

Technical Reports

12-Nov-2019
Doc No. Document NoDocument No

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Technical and Engineering Assessment and Input for the Minimum Viable Capability Project

Technical and Engineering Assessment and Input for the Minimum Viable Capability Project

Client: QinetiQ

ABN: 68 125 805 647

Prepared by

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Prepared With

12-Nov-2019

Job No.: 60614450

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Quality Information

Document	Technical and Engineering Assessment and Input for the Minimum Viable Capability Project
Ref	60614450
Date	12-Nov-2019
Prepared by	Mike King
Reviewed by	Malcolm Catchpole

Revision History

Rev	Revision Date	Details	Authorised	
			Name/Position	Signature
A	14-10-2019	Draft Issue	Malcolm Catchpole Technical Director - Defence	
B	24-10-2019	Draft Issue	Malcolm Catchpole Technical Director - Defence	
C	01-11-2019	Concept Report	Malcolm Catchpole Technical Director - Defence	
D	01-11-2019	Concept Report	Malcolm Catchpole Technical Director - Defence	

Table of Contents

Executive Summary

This report aims to confirm the project basis of the design concept, design elements, design codes and standards and siting of the Minimum Viable Capability (MVC) project located at Cloncurry Airport, Queensland.

This report provides the following:

a. Provides a description of the design requirements

b. Details the client's requirements for each of the buildings within the new project boundary

c. Provides a proposed concept design to meet the client's requirements for each building

d. Concept civil design

e. Concept electrical design

f. Concept mechanical and communication systems design requirements

1.0 Design Requirements

1.1 General Design Principles

The works at Cloncurry airport have been designed in accordance with the identified QinetiQ requirements and with consideration of the existing assets and the remote location. The important design principles which are relevant to the facility are:

- Simplicity of design and cost-effective construction solutions.
- Flexible design solutions to support the QinetiQ test programs.
- Be consistent with the design principles established for the Queensland Government's Detailed Business Case.
- Ability to comply with work health and safety (WHS) requirements and minimise hazards and risks for employees and the local community.
- Provision for cost effective management and maintenance throughout the life of the facilities.

1.2 Building Compliance

The Business Case concept designs were developed in accordance with various applicable codes and standards in order to provide compliant ground system assets suitable for their intended purpose. The concept design (and costing of the facilities) have been evaluated against the following general compliance requirements:

- Building Classification in accordance with the performance requirements of the National Construction Code (NCC).
- An Importance Level (Probability of Exceeding) in accordance with the NCC.
- Where applicable, universal access should be provided to all facilities in accordance with the access and mobility provisions of the NCC and AS1428.1 (Parts 1 to 4). Design should incorporate the intent of the Disability Discrimination Act 1992 (DDA).
- QinetiQ ICT Tier Rating as per site/building categorisation rating.
- Security requirements applicable to the defined CONOPS.
- ESD provisions as defined in Section J of the NCC (and supporting national and Defence standards including):
  - Energy compliance with the Defence Building Energy Performance Manual (BEPM) 2012 (may become a medium-term prerequisite for defence industry test facilities).
- Compliance with the State Government and Local Authority requirements.
- Pollution and Waste control compliance with the State Government and Local Authority requirements.

1.3 Statutory Requirements

There are a range of statutory requirements associated with the ground-based infrastructure concept including but not limited to:

- The NCC.
- Environmental Protection and Assessment requirements.
- Work Health and Safety Act and Regulations.
- MOS 139.
- Safe Work Australia Codes of Practices.
- Dangerous Goods Safety Act and associated Regulations.

2.0 Site Layout

The Registered Owners of Lot 36 RP 884323 (the Site) is Cloncurry Shire Council (CSC). The Department of State Development, Manufacturing, Infrastructure and Planning (DSDMIP) is currently negotiating a lease from CSC for a portion of the lot on which the works are to be constructed. It is anticipated that once a lease has been negotiated between CSC and DSDMIP an associated commercial arrangement will be negotiated between DSDMIP and QinetiQ for the project works including construction, operation and maintenance for a two (2) year period.

The layout of the facility falls into two categories, landside and airside. The landside area will include the operational facilities, hardstand, hangar, and supporting infrastructure. It will also include the approach roads and services corridors required for unfettered (non-airside) access to the operational areas. The airside areas are yet to be fully defined but will be used for the radar equipment.

Figure 1 below represents the proposed site layout.

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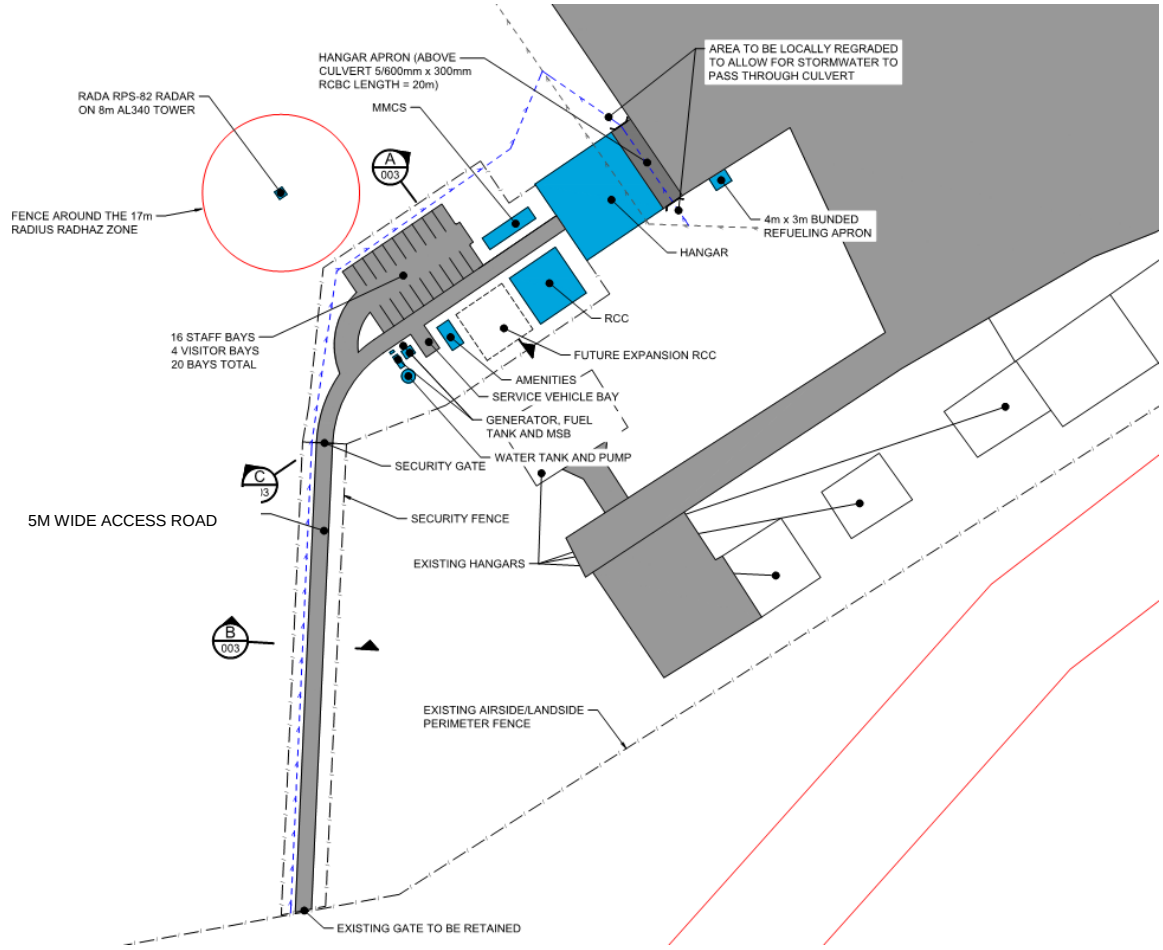

Figure 1 Site Layout

The proposed location of the new radar equipment and associated connections back to the new facility are shown in below.

3.0 Hangar Layout Concept Design

Below is a summary of the functional criteria provided by QinetiQ for the proposed hangar:

- Hangar dimensions - 20m x 20m x 7.5m high.
- An air-conditioned workshop room within the hangar
- Have work benches installed within the workshop area.
- Power and lighting throughout
- Be lockable.
- Have access to the General Aviation (GA) parking apron.
- The hangar is to have a centrally located 12m wide and 6.5m high opening on the apron side.
- The hangar must also have a centrally located 4m wide and 6.5m high opening at the rear.
- Will be operated and maintained by QinetiQ.

In order to meet the above requirements, the design of the proposed hangar will incorporate the following:

- 200mm thick concrete slab on ground. This is subject to confirmation of the geotechnical conditions on site.
- Colorbond shed construction using standard Colourbond colours
- Further details can be access from the webpage below:

https://techspanbuilding.com.au/aircraft-hangar-design/

A graphic of the proposed hangar is provided in Figure 2 below.

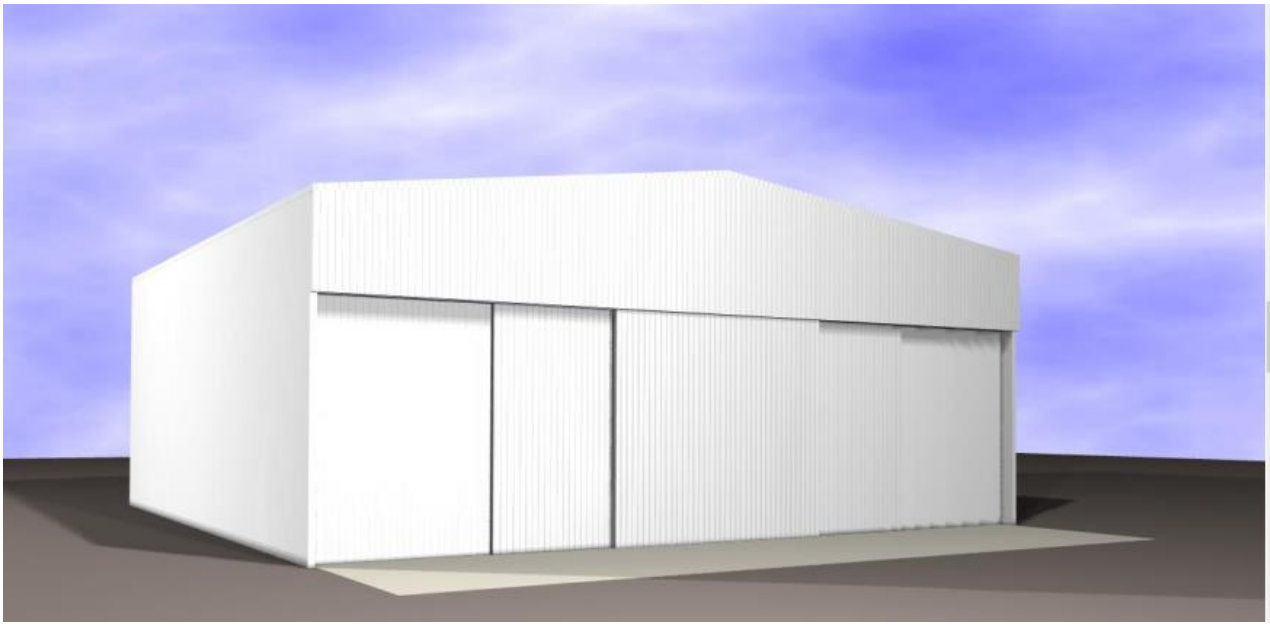

Figure 2 Proposed Hangar

Proposed floor plan of Hangar in Figure 3 below:

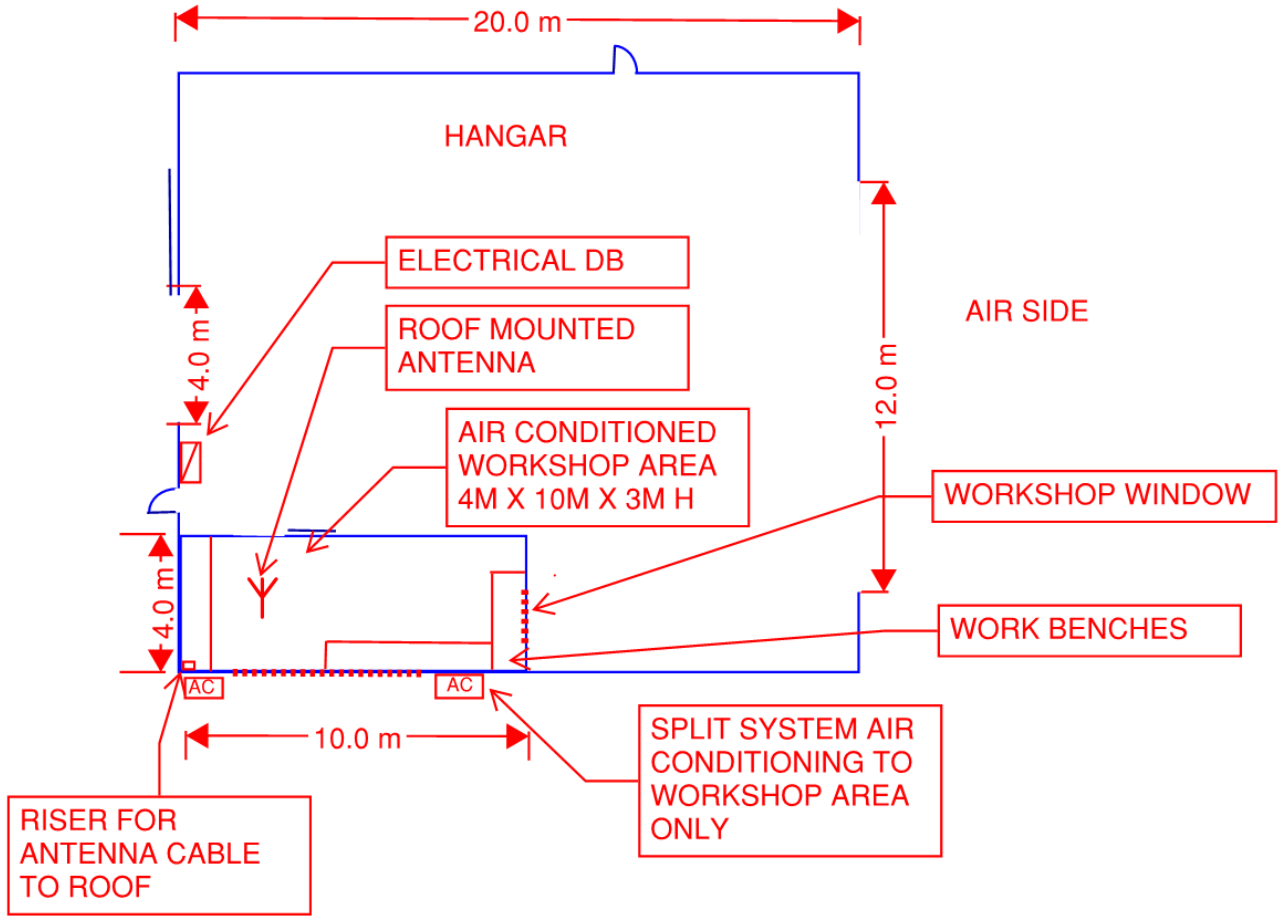

Figure 3 Proposed Hangar Floorplan

Further Inclusions/ clarifications of the hangar are as follows:

- 2 personnel access doors, one air side and the other from the back of the hangar
- Hangar distribution board connected back to MVC main switchboard. Provide surge arrestor and required circuit breakers for general power and hangar doors plus lighting. No meter required in this board.
- Roof cowls along ridge of roof to assist removal of hot air
- Antenna on roof to rear of hangar above the workshop area.
- Obstacle lighting next to antenna at the highest point
- Workshop within the hangar to include the following:
    - Room dimensions 10M x 4M x 3M Ceiling height
    - Insulated walls and ceiling
    - 3 x work benches
    - Sliding door to front
    - 1 window to outside and a second window into hangar
    - 2 x spit air-conditioning units
    - 2 x Anti-static terminals (one per bench)
    - Linear LED lighting

- 5 x double socket outlets and 1 x 15 Amp outlet located above each bench

- Hand washing sink inside the hangar with cold water connection and provision for future connection of eye wash & safety shower.
- Exit and emergency lighting
- Fire detection systems connected to local audio and visual sounder system. No external connection.
- Drinking fountains within the hangar

Note:

- No requirement for data or Wi-fi provision within the hangar. This will be provided by client if required.

Apron Area in Front of Hangar:

The apron area located airside in front of the hangar doors will designed and built to accommodate a maximum load of 5,700kg.

4.0 RCC and Amenities Buildings

4.1 RCC#1 and Future RCC#2

The facility for the Range Control Centre (RCC)#1 will generally comprise a 12M x 12M demountable office arrangement located on a hardstand area. A clear area 12M x 12M will be provided for a future RCC#2 next to RCC#1.

The demountable will be raised slightly to assist with under croft services, i.e. water and a drainage point. Also a raised demountable will allow ease of electrical and comms service to be reticulated under the floor area and rise up to wall mounted outlets.

It is understood that initial operations will include 14 staff members (11 Boeing and 3 QinetiQ). As there is potential for future expansion of the facility, the design will include an allowance for a second RCC within the overall site layout.

The RCC will contain the following as a minimum:

- 2 closed offices and 17 workstations.
- A kitchenette area to contain an electric hot water unit, sink and fridge,
- 3 phase electrical distribution board (refer to electrical section for further details).
- Contain communications links (Boeing supplied Flight Termination System (FTS), UAS Command and Control (C2), and radio communications links).
- Surface mounted LED linear luminaires throughout.
- General power to kitchenette and 2 x double socket outlets to each workstation.
- Air-conditioning throughout.
- Domestic smoke detection and a thermal detector in the kitchenette
- Two exits.

Typical layout of the proposed demountable shown in Figure 4 below.

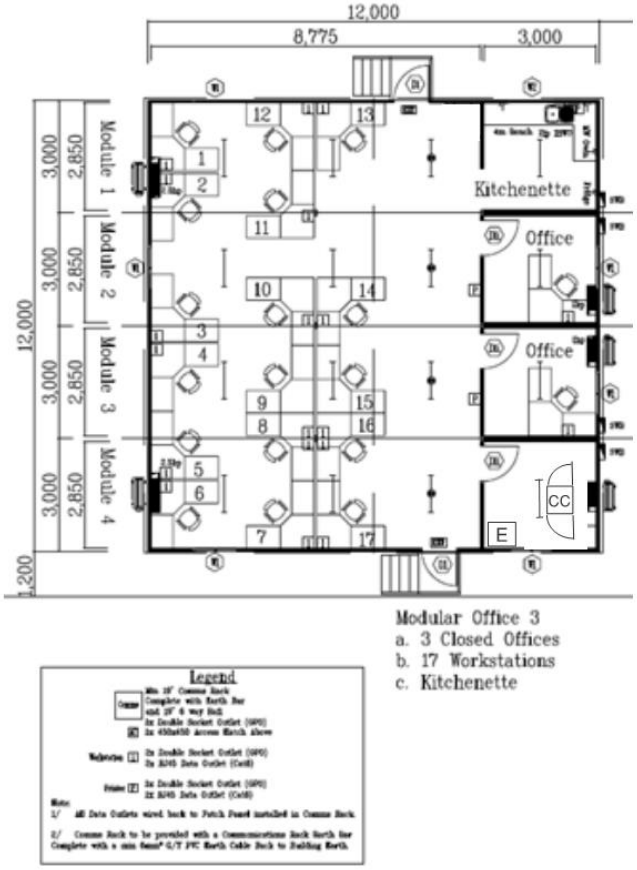

Figure 4 RCC Layout

4.2 Amenities

The proposed amenities should be a modular male/female toilet arrangement to create a fully self-contained toilet unit so that the new facility can take a water supply from the airport building and contain its own effluent rather than connecting to the airport sewer main. An example of a modular facility is provided in Figure , along with a typical layout in Figure 6.

Figure 5 Amenities Block

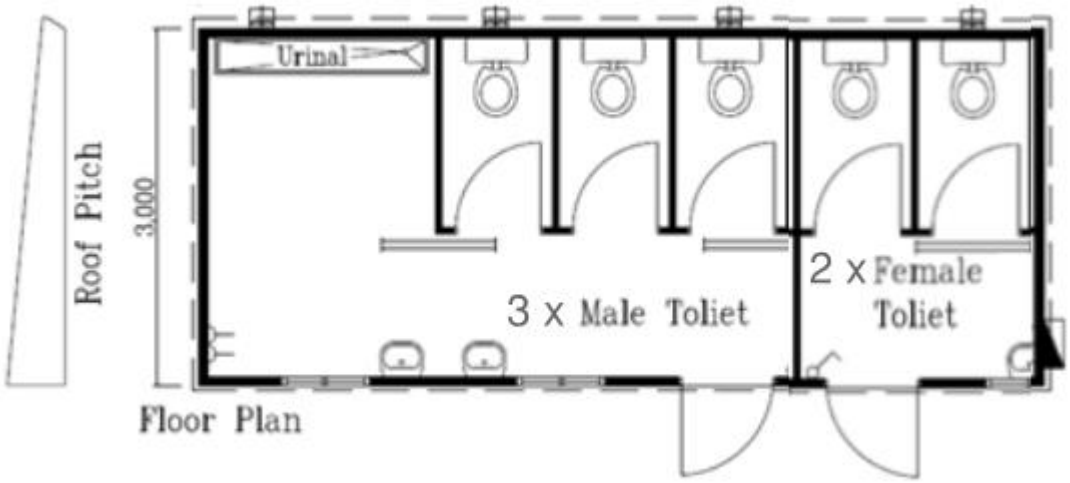

Figure 6 Typical Amenities Layout

4.3 Radar

The radar equipment will be provided by the client and will require the following:

- Concrete pad 2m x 2m.
- Dedicated power supply from the new main switchboard. The power supply will be backed up via a standby diesel generator.
- Fibre optic cable link run underground in a 100mm white PVC conduit with 500mm minimum cover from the Radar to the RCC building. The single mode fibre optic cable to terminate onto a FOBOT located within an external IP rated 450mm x 450mm cabinet.
- Obstacle light to top of tower.
- A fence will be provided around the radar tower as a 17M radius RADHAZ zone.
- Tower arrangement as per the requirements of APAC AL340. 8M height. Refer to Figure for copies of the general view and elevation. Further details on the tower requirements are contained in Appendix A.

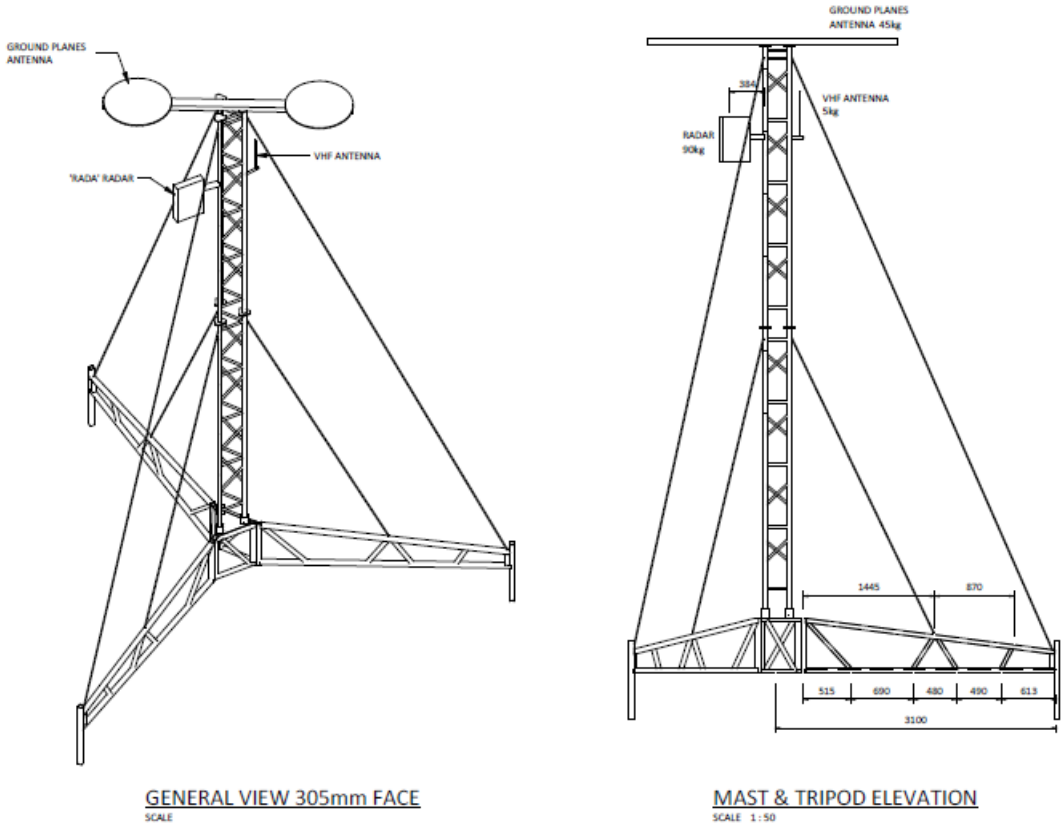

Figure 7 AL340 General View and Elevation

4.4 MMCS Container

Boeing will provide their own customised Mobile Mission Control System (MMCS), which will be a 40ft shipping container (fit for up to 10 personnel) that will either remain on site (no one else to use) or removed by Boeing. The MMCS container will require the following:

- Concrete slab for the MMCS container to sit on. Container to be elevated to minimise water ingress in a flood condition.
- 3 phase power supply. The estimated load is 7.5kW (refer electrical section for further details).

5.0 Civil Works

5.1 Roads, Pavements, Hardstands, Parking

Access to the new facility will be via an existing dirt track that connects to current airport access road, Sir Hudson Fysh Drive, shown in **Figure 8** below.

Figure 8 Site Location

5.1.1 Roads and Pavements

A new road will be constructed within the project extents to connect the existing dirt road to the site facilities. It is assumed that the existing dirt road is suitable to be used for access to the site entrance. The new road within the site will be a bitumen two coat spray seal. Minor maintenance and material top-up of the access road may be required during the life of the facilities.

The access road is to be constructed to a width of 5m to allow for access of a medium rigid vehicle, shown in **Figure** 9 below.

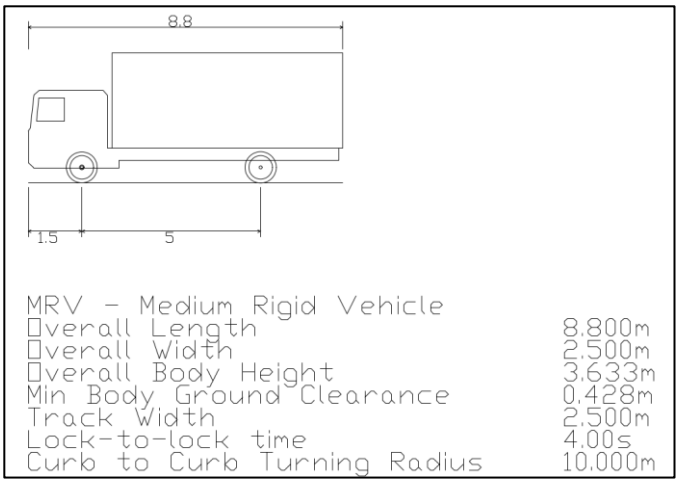

Figure 9 - Medium Rigid Vehicle

5.1.2 Parking

Carparking will be provided onsite and will consist of a 200mm Type 2.3 Unbound granular or approved equivalent pavement. The dimensions of the carpark have been designed to conform with AS2890.1, User Class 1 parking and will allow for parking of 20 vehicles, 16 employee and 4 visitor parks. Similar to the road, maintenance may be required on the carpark.

5.2 Stormwater Drainage

An indicative stormwater drainage design has been produced to allow for early concept planning. There is limited topographical information available for the site so suitable provisions should be made to allow for changes to the design during later stages. The proposed drainage design consists of realigning an existing open channel and installing 5 parallel 600x300mm box culverts, as shown in **Figure** 10 below.

There is an existing open channel that runs through the proposed hangar building. This channel will be realigned to run under the proposed concrete slab connection between the existing apron and proposed hangar. 5 parallel 600x300 box culverts will run under the concrete slab between the realigned open channels. A portion of the existing channel to the north will need be to regraded to ensure a sufficient fall is maintained.

The drainage design will need to be revisited once topographical information is available to confirm the proposed drainage design levels and sizes are suitable.

It is assumed that the drainage around the facilities and runoff from the buildings will be designed by the contractor during construction.

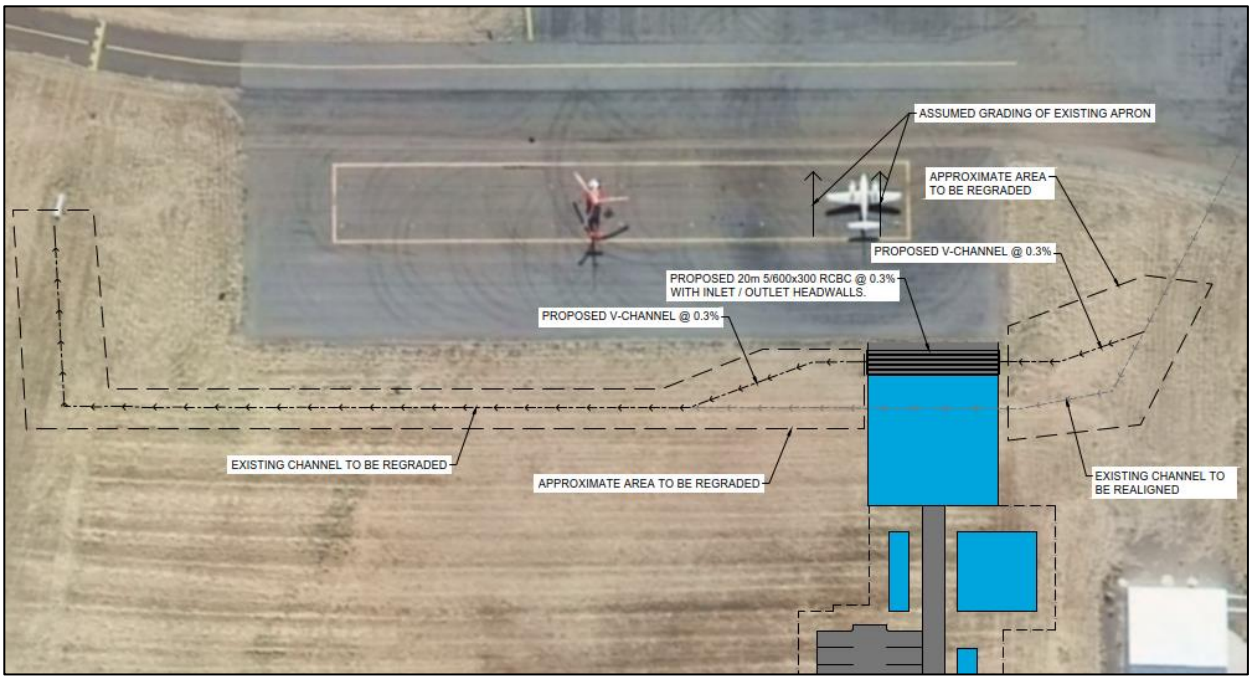

Figure 10 - Indicative drainage design

5.3 Potable Water

The current design for water supply to the amenities building is for a storage tank and pump system. It may be feasible to service the facilities from the existing water main supplying the airport, however further investigations are required.

The existing water main that services Cloncurry Airport has been identified through Dial Before You Dig (DBYD) plans. The water main runs along Sir Hudson Fysh Drive, to the south east of the airport facilities. A service connection from this water main to the proposed buildings should be investigated as part of the next steps.

5.4 Wastewater

The wastewater system for the new facility will consist of a below ground system that will store the wastewater prior to being collected by truck and transported offsite for disposal. The storage system will be located beneath the amenities building adjacent to the carpark to allow for collection.

Further investigation is required to estimate the accumulation of waste from the facility. This will determine the size of storage and frequency of collection required.

5.5 Fencing & Gates

The fence arrangement will comprise an 2400mm high fence similar to the existing fence around the Cloncurry airport perimeter. The gates will be a manual locked arrangement and no access control or CCTV coverage is proposed.

6.0 Electrical Works

6.1 Design Philosophy

The electrical (power and lighting) systems shall conform to the requirements of all applicable legislation, codes of practice and guidance publications relevant to Service and Installation Rules and Australian Standards.

The MVC facility will require stable and reliable 3 phase power supply as well as standby power supplies. The electrical works will generally comprise as follows:

- Main Switchboard:
  - The site main switchboard will be an IP65 external orange coloured switchboard, manufactured to Form 2A, 250Amp, with 25% spare circuit breaker capacity.
  - Dedicated circuit breakers to each building as follows:
    - 50Amps, 3 phase circuit breaker – Hangar
    - 32Amps, 3 phase circuit breaker – RCC Building
    - 32Amps, 3 phase circuit breaker - MMCS
    - 32Amps, 1 phase circuit breaker – Amenities
    - 20Amps, 1 phase circuit breaker – Radar
  - 50kA surge arrestor within the main switchboard to protect downstream circuits from power surges
  - Multi-function meter to record the total power consumption of the new facility. Meter to be similar to the Schneider PM 5000 series.
  - Switchboard to be setup with a dual supply arrangement connected to an internal 160Amp automatic transfer switch. The transfer switch will accept a connect from the prime rated generator (main generator) and a standby generator (runs only when the prime generator fails)
- Submain cables
  - Provide submain cables from the above circuit breakers within 100mm HD PVC orange conduit, with an LV trench 600mm deep with a minimum 500mm cover in line with AS3000.
- Distribution boards:
  - RCC Building:
    - 63 Amp, 3 phase, Form 2 with 25% spare capacity
    - 4 x 20 Amp power supplies to air-conditioning units
    - 4 x 20 Amp power supplies to kitchenette equipment
    - 5 x 20 Amp circuit breakers and RCD protection to general power circuits
    - 4 x 16 Amp circuit breakers and RCD protection to lighting circuits
  - Hangar
    - 63 Amp, 3 phase, Form 2 with 25% spare capacity
    - 2 x 20Amp power supplies to air-conditioning units
    - 4 x 20 Amp circuit breakers and RCD protection to general power circuits around hangar
    - 4 x 16 Amp circuit breakers and RCD protection to lighting circuits
    - 2 x 20 Amps, 3 phase to main doors

- 2 x 20 Amp circuit breakers and RCD protection to the 10Amp socket outlets located above each bench in the workshop area
- 2 x 20 Amp circuit breakers RCD protection to the 15Amp outlets above each bench in the workshop area.

6.2 Lighting

- Hangar lighting:
  - Proposed Lux level through is 400lux
  - Provide low glare and high output highbay LED lighting to interior of hangar, similar to the Versalux Capri Maxi below:

- Amenities and RCC Building:
  - Internal lighting to be surface mounted LED luminaires, 4000K
  - External lighting on these buildings to comprise 600mm long IP rated, linear LED luminaires at each door and along the side of the building for safe access.
  - No lighting to carpark or other external lighting is proposed.
- Obstacle lighting:

The following lighting is required to the top of the radar tower and to the top of the hangar at the highest point:

Twin head, low intensity, LED obstacle light. Night vision compatible (RED and IR LEDS). Temperature range -55 to +55 Deg C. 5 year warranty. Low voltage AC variant. 4W per head. IP66. Manufactured by Farlight, reference NV-L810, as per photo below:

6.3 Generator and fuel storage arrangement

The proposed generator arrangement to the site will be as follows:

The site will be provided with a 80kVA prime rate diesel generator installed within an acoustic enclosure with an integral day tank in the base of the unit. There will also be a 80kVA standby diesel generator installed within an acoustic enclosure with an integral day tank in the base of the unit.

The diesel generators will be support with a 5000L above ground self-bunded bulk fuel tank. The bulk fuel tank will be connected to each generator.

Typical IP rated acoustic canopy generator arrangement shown below:

TECHNICAL DATA	
GENERATOR SPECIFICATIONS	
Type	Synchronous
Three phase (Prime) power	80kVA
Voltage	415V/50Hz
Amps	115A
Insulation Class	H
Protection	IP23
Alternator Brand	Brushless Leroy Somer
Generator Including Enclosure - Dimensions	
Dimensions (LxWxH)	2888 x 1100 x 1900mm
Dry Weight	2100kg

The proposed fuel storage to be similar to the following:

SAFE FILL	5000 L
DIMENSIONS	2400 x 2000 x 1460mm
WEIGHT	1210 Kg

Optional Features

- 12v pump
- 24v pump
- 240v pump
- 10m retractable heavy duty hose reel
- 50L spill kit
- Solar panel and battery
- Fire extinguisher
- Towable skid frame
- Spill grate
- Bolt on pump bay
- Tank level gauge
- Filter flow meter

7.0 Mechanical Works

7.1 Design Philosophy

Mechanical systems design shall conform to the requirements of all applicable legislation, codes of practice and guidance publications relevant to QLD standards and guidelines.

Standard requirements for heating, ventilating and air-conditioning (HVAC) systems may be applicable.

No building energy performance requirements have been included in this concept.

The section only deals with the requirements detailed for the Hanger. Supporting cooling, ventilation and associated HVAC systems are assumed to be provided as part of the demountable buildings and amenities. Power load provisions have been made but there is no supporting technical design in respect of mechanical services.

7.2 Design Standards

In addition to the relevant national codes and standards nominated, mechanical services design will generally be in accordance with the following:

- The Australian Institute of Refrigeration, Air Conditioning and Heating (AIRAH).
- The American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc. (ASHRAE).

7.3 Concept for HVAC to the Hangar Workshop

Refer to details in the hangar section above.

8.0 Communications

A 42 RU communications rack is proposed within the RCC building for passive and active equipment. The communications scope to include the passive equipment only and all active equipment i.e. switches, servers, UPS will be supplied by the client. The passive communications equipment to generally include the following:

- RCC Building:
  - Multi mode fibre optic cable from Radar to comms rack in RCC, include media converters at each end
  - Cat 6 structured cabling from each workstation back to the communications rack
  - Patch panels for cat 6 cabling to terminate and testing
  - Proposed 42RU, 600mm W x 800mm Deep server rack similar to photo below from rack technologies, including power rails.

The client will utilise a 4G mobile network to communicate from the facility.

Appendix A

Radar Tower Info

STRUCTURAL ASSESSMENT & CERTIFICATION

TRIPOD FRAME & MAST

Boeing Defence Australia Ltd

Ref. No: **1804**

Date: **24 May 2018**

MODCO GROUP

STRUCTURAL ENGINEERING | PROJECT MANAGEMENT | BUILDING & CONSTRUCTION

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Document Details

Ref. No:	1804
Document Title:	Structural Assessment & Certification – SASU tripod & mast
Report Prepared For:	Boeing Defence Australia Ltd

Document Register

Revision	Date Issued	Prepared By	Check by	Issued To
A	26/03/18	DY	LS	Mark Nielsen
B	27/03/18	DY	LS	Mark Nielsen
C	24/05/18	DY	LS	Mark Nielsen

CONTENTS

SECTION 1 - **SCOPE AND APPLICATION**

Modco Group was engaged by *Boeing Defence Australia Ltd* to undertake a structural assessment and certification of the situational awareness system unit (SASU – portable tripod and mast) for deployment in Australia, within wind regions category 'A'. The SASU structure is to support ground planes antenna and radar equipment.

1.1 Scope of Structural Assessment & Certification

The following professional services were undertaken on the SASU tripod and mast structure:

a. Assess wind loads and design forces.

b. Structural modelling and static analysis

c. Calculate deflections and determine design capacity of members and connections.

d. Structural adequacy certification.

1.2 Structural Assessment & Certification Limitations

This assessment and certification is based on the design and fabrication of the tripod and mast being carried out in accordance with approved design drawings (refer section 5.0) and all other specifications in this report.

Refer appendix A for the following drawings:

Portable tripod and mast assembly drawings: Modco Group drawings: 1804 S03(1) & S04 (1)

SECTION 2 - **DESIGN CRITERIA**

The following design parameters were adopted in the structural analysis and design of the portable tripod and mast.

2.3 General Principals

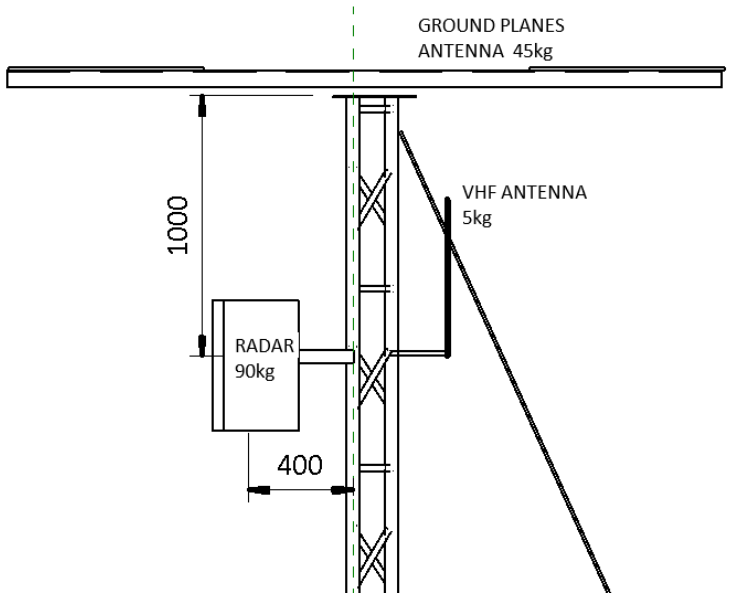
- The design working life of the portable tripod and mast is less than 25 years.
- Importance level: II (per AS3995).
- Where the tripod and mast are deployed on a hill or an escarpment, the hill slope is less than 5%.
- Location of the portable tripod and mast is to be a minimum horizontal distance of 4 times the hill height from the escarpment crest.
- Maximum elevation of the portable tripod and mast is to be less than 10m above ground level.

2.4 Self-Weight

- portable tripod frame
- Mast and guy cables

2.5 Super imposed Load

- Ground planes antenna – 45kg
- VHF antenna – 5kg
- Rada Radar – 90kg
- Tripod ballast – nil



2.6 Design Wind

- Regions: A1 to A5 (refer map below for Australian wind regions)
- Terrain category: 2.0 (max)
- Wind directional multiplier: 1.0
- Design wind speed 44.5 m/s (160 km/hr)

The design wind speed noted above has been specifically requested by Boeing Defence Australia. This wind speed is typical within regions A1 to A4 in Australia, in accordance with AS1170.2. The following diagram shows (extract from AS1170.2) wind region locations.

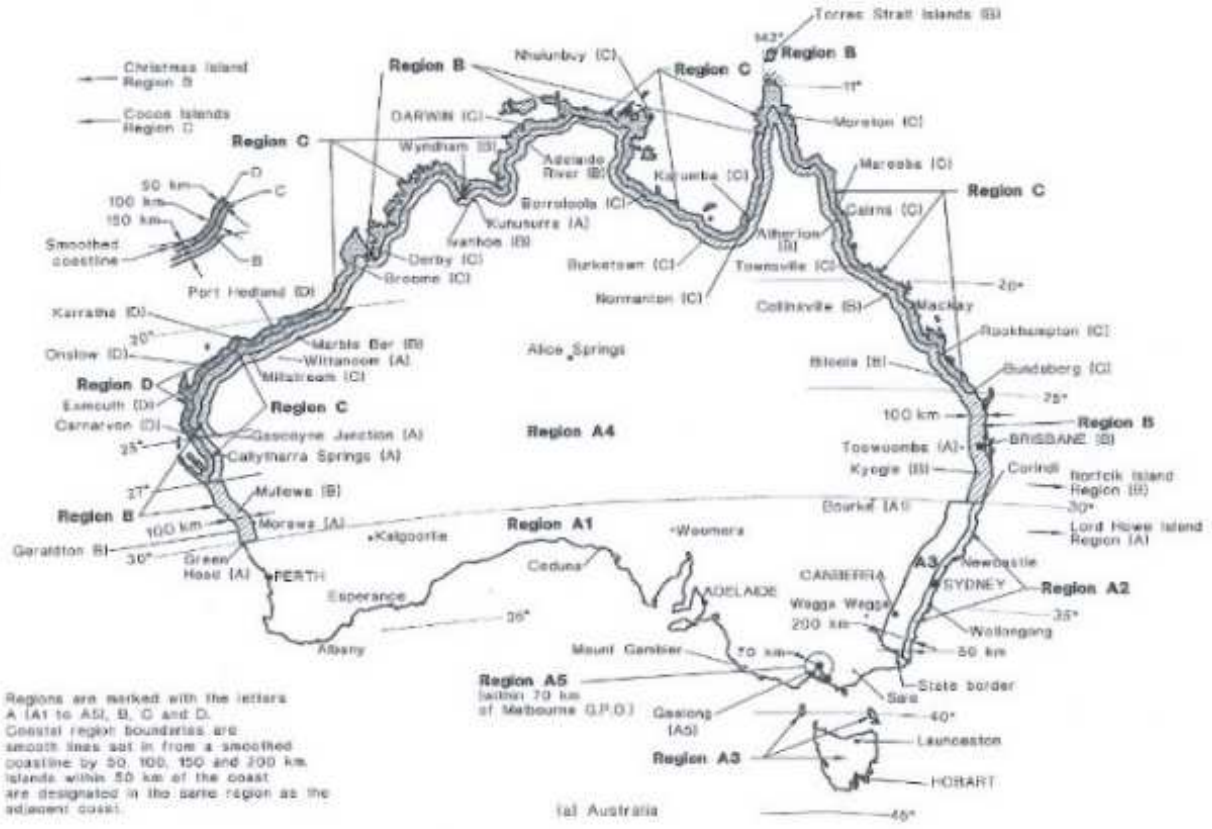


FIGURE 3.1(A) WIND REGIONS

2.7 Primary Load Cases adopted in the structural analysis modelling

Mark	Description	Weight
G	Self-weight of portable tripod & mast	245 kg
Gs	Total antenna self-weight (head load)	140 kg
W	Wind effects causing overturning and sliding – base wind speed	44.5 m/s

SECTION 3 - **MATERIALS**

3.1 Applicable Australian design standards:

- AS1170.1 – Structural Design Actions – Part 1: Permanent, imposed & other actions
- AS1170.2 – Structural Design Actions – Part 2: Wind Actions
- AS3995 – Design of Steel Lattice Towers & Masts
- AS4100 – Steel Structures
- AS1163 – Cold formed structural steel hollow sections
- AS3679.1 – Structural Steel – Part 1: Hot-rolled bars and sections
- AS1664.1 - Aluminium structures – Part 1: Limit State design
- AS3569 – Steel wire ropes – Product specification

3.2 Structural members and fixings:

- Connection cleats and base plates to be min grade 250 MPa (per AS3679.1)
- Square & rectangular hollow members to be min grade 350 MPa (per AS1163)
- Connection bolt are grade 8.8 (per AS1152)
- Min bolt diameter to be 12mm (per AS1152)
- Aluminium members to be structural purpose with a min Tensile ultimate strength of 152 MPa (per AS1664.1)

3.3 Guy Wire Cables

- The guy wire cable is to be Ø6mm (per AS3569)
- Grade 1570 with a min breaking force of 18kN
- Guy wire preload tension to 1.0 kN

SECTION 4 - **STRENGTH DESIGN**

4.1 Strength Utilisation

Capacity of structural framing members is tabled below. The governing load combination and strength utilisation is listed for the main structural components.

Structural Member	Governing combination Load Case (ULS)	Strength Utilisation (%)
Tripod central frame	1.2G + 1.2Gs + W (AS1170.1)	18
Tripod leg frames	1.2G + 1.2Gs + W (AS1170.1)	99
Tripod/mast connection	1.2G + 1.2Gs + W (AS1170.1)	20
Mast Legs/Webs	0.9G + 1.2Gs + W (AS1170.1)	55 / 93
Jim pole (lifting prop)	Mast in horizontal position	20

The tripod and mast were assessed to determine the maximum load it can support whilst being raised and 'in-service' (deployed) conditions. The governing situation is when the tripod is 'in-service' so this set the max load at 140kg.

During the lifting condition with the 90kg offset load the tower model indicated a minor twist in the mast. This twist is in the order of about 30mm at the location of the load and the stress on the mast members are approx. 30MPa (strength utilisation 23%). This result may vary depending on the exact offset position of the load to the lifting point on the tower. The lifting arrangement may need re-assessment if adverse effects are noted during lifting.

SECTION 5 - **STABILITY ASSESSMENT**

The tripod and mast were assessed as having the ability to support all combination load cases and remain stable when subject to overturning and sliding forces.

The design assessment is based on the following:

- Provide sliding restraint between tripod frame and ground surface equal to 454kg per leg. Eg (pin leg base to ground or chocks)
- Provide a support base at each leg that can withstand min 220 kPa bearing pressure spread over a 150x150 mm² area or 500kg.
- Provide, addition 275kg dead weight or an anchor with 275kg uplift capacity at each leg.

The load combination cases adopted in the assessment are listed in the following table

Design Event	Governing combination Load Case
Overturning stability	0.9G + Gs + W (AS1170.1)
Sliding stability	1.2G + 1.2Gs + W (AS1170.1)

SECTION 6 - **COMPLIANCE CERTIFICATION**

The items described in this report have been assessed per the design criteria in this report and comply with the relevant design Australian standards.

Structure:

Steel framed tripod base and aluminium mast assembly.

Description of Components certified:

Steel and aluminium framing members and connections

Basis of Design:

Per design criteria in section 2 in this report

Referenced documentation:

Portable tripod and mast assembly drawings: Modco Group drawings: 1804 S03(1) & and S04 (1)

Competent Person Details:

Name: Leonel Sobral

Professional Qualifications: NER, MIEAust, CPEng, RPEQ (No. 10669)

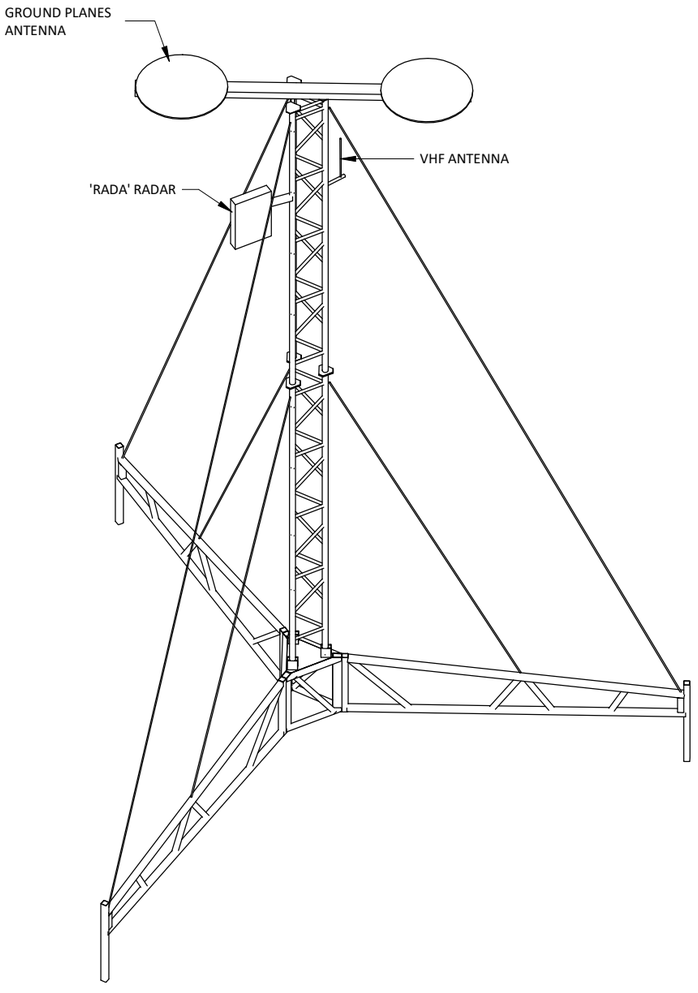
Leonel Sobral

APPENDIX A

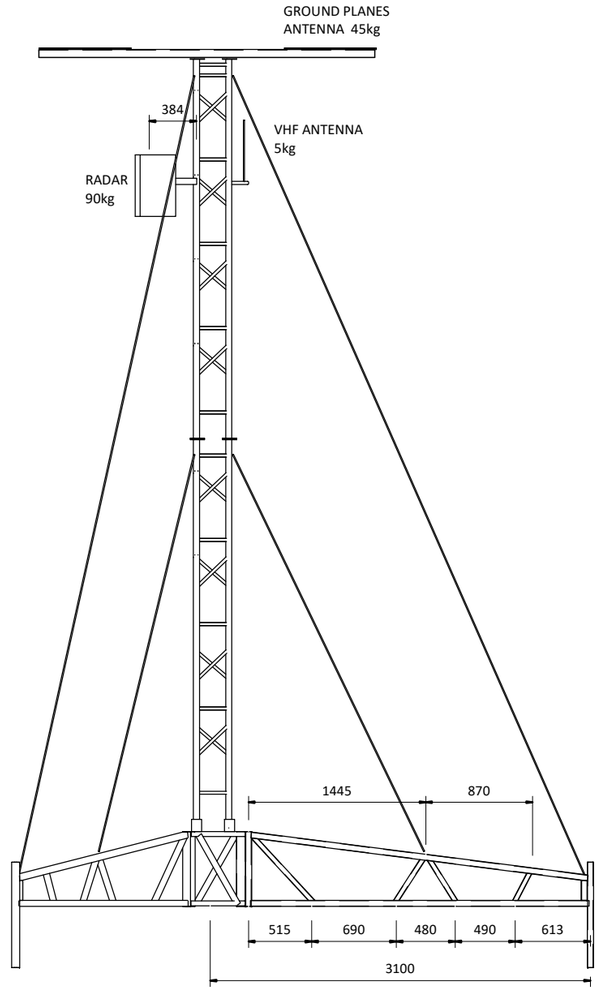
Tripod and mast plans

ANTENNA STABILITY

1. PROVIDE SLIDING RESTRAINT BETWEEN TRIPOD FRAME AND GROUND SURFACE EQUAL TO 454KG PER LEG. EG (PIN LEG BASE TO GROUND OR CHOCKS)
2. PROVIDE A SUPPORT BASE AT EACH LEG THAT CAN WITHSTAND MIN 220 KPA BEARING PRESSURE SPREAD OVER A 150x150 MM² AREA OR 500KG.
3. PROVIDE, ADDITION 275KG DEAD WEIGHT OR AN ANCHOR WITH 275KG UPLIFT CAPACITY AT EACH LEG.



GENERAL VIEW 305mm FACE
SCALE



MAST & TRIPOD ELEVATION
SCALE 1 : 50

WIND DESIGN CRITERIA - AS3995 & AS1170.2

IMPORTANCE LEVEL	II
WIND REGION	A1 - A5
TERRAIN CAT.	2.0
DIRECTION MULT.	1.0
DESIGN WIND SPEED	44.5 m/s (160Km/hr

STRUCTURE CLASSIFICATION PER AS3995 IS TYPE II

a. *the danger to life in case of collapse may be negligible and adequate warning arrangements are incorporated to ensure the general public is not unduly endangered; and*
b. *the loss of the services provided is not critical, e.g. where alternative means of communication can be provided.*

NOTE:
TOWER DESIGN CRITERIA EXCLUDES LOCATIONS SUCH AS:
AT OR NEAR TOP OF HILL, RIDGE OR ESCARPMENT AND WITHIN 4x HILL HEIGHT FROM HILL EDGE OR ECREST AND SLOPES GREATER THAN 5%.

ALUMINIUM WORK NOTES

A1 ALL ALUMINIUM WORK TO BE IN ACCORDANCE WITH AS1664 - ALUMINIUM STRUCTURES

A2 UNLESS NOTED OTHERWISE, ALL ALUMINIUM SHALL BE IN ACCORDANCE WITH
- AS1734 ALUMINIUM AND ALUMINIUM ALLOYS - FLAT SHEET, COILED SHEET AND PLATE
- AS1865 ALUMINIUM AND ALUMINIUM ALLOYS - DRAWN WIRE, ROD BAR AND STRIP
- AS 1866 ALUMINIUM AND ALUMINIUM ALLOYS - EXTRUDED ROD, BAR, SOILD AND HOLLOW SHAPES

A3 ALL WELDING TO BE IN ACCORDANCE WITH AS1665 WELDING CONSUMABLES TO BE IN ACCORDANCE WITH TABLE 7.2 OF AS 1664.

A4 ALL WELDS SHALL BE 6mm STRUCTURAL PURPOSE ALL ROUND FILLET WELDS UNLESS NOTED OTHERWISE.

A5 ALL BOLTS TO BE STAINLESS STEEL COMPLYING WITH ISO 3506. U.N.O

A6 ALL BOLTS TO BE Ø11mm (7/16TH) ZINC PLATED OR STAINLESS STEEL U.N.O.

GUY CABLE NOTES

G1 ALL GUY CABLES TO TO BE IN ACCORDANCE WITH AS3569 - STEEL WIRE ROPES - PRODUCT SPECIFICATION

G2 GUY CABLES TO BE CLASS 6x7, GRADE 1570

G3 MINIMUM BREAKING STRENGTH

ROPE DIAM	MIN BREAKING FORCE (kN)	PRE-TENSION FORCE (kN)
4	8.4	0.45
6	18.8	0.95
8	33.4	1.7

G4 ALL CABLE JOINS AND ATTACHMENTS TO BE IN ACCORDANCE WITH AS2759 - STEEL WIRE ROPE - USE, OPERATION AND MAINTENANCE

GENERAL NOTES

G1 THESE DRAWINGS SHALL BE READ IN CONJUCTION WITH ALL OTHER CONSULTANTS' DRAWINGS AND SPECIFICATIONS.

G2 BEFORE PROCEEDING WITH THE WORK ANY DISCREPANCIES IN THE CONTRACT DOCUMENTS SHALL BE REFERRED FOR DECISION TO THE ENGINEER.

G3 SETTING OUT DIMENSIONS AND SIZES OF STRUCTURAL MEMBERS SHALL NOT BE OBTAINED BY SCALING THE STRUCTURAL DRAWINGS.

G4 ANY SETTING OUT DIMENSIONS SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE CHECKED BY THE CONTRACTOR BEFORE CONSTRUCTION COMMENCES.

G5 ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CURRENT EDITIONS, INCLUDING AMENDMENTS, OF THE RELEVANT AUSTRALIAN STANDARDS, CODES OF PRACTICE AND REGULATIONS, INCLUDING LOCAL GOVERNMENTS.

STEEL WORK NOTES

S1 ALL STEELWORK TO BE IN ACCORDANCE WITH AS4100-STEEL STRUCTURES

S2 UNLESS NOTED OTHERWISE, ALL STEEL SHALL BE IN ACCORDANCE WITH:
- AS3679 FOR HOT-ROLLED SECTIONS - MIN YIELD STRENGTH 300MPa
- AS3678 FOR PLATE OR FLAT BAR - MIN YIELD STRENGTH 250MPa
- AS 1163 FOR SHS AND RHS SECTIONS - MIN YIELD STRENGTH 350MPa
- AS 1163 FOR CHS SECTIONS - MIN YIELD STRENGTH 250MPa

S3 ALL WELDING TO BE IN ACCORDANCE WITH AS1554.1 WELDING CONSUMABLES TO BE E48XX OR W50X UNLESS NOTED OTHERWISE.

S4 ALL WELDS SHALL BE 6mm STRUCTURAL PURPOSE ALL ROUND FILLET WELDS UNLESS NOTED OTHERWISE.

S5 ALL EXPOSED STEEL WORK TO BE HOT DIPPED GALVANISED, UNLESS NOTED OTHERWISE.

S6 ALL HIGH STRENGTH BOLTS SHALL COMPLY WITH AS1252 AND SHALL BE INSTALLED IN ACCORDANCE WITH AS4100.
- 8.8/S INDICATES HIGH STRENGTH BOLTS SNUG TIGHT
- 8.8/TB INDICATES HIGH STRENGTH BOLTS TENSIONED TO BEARING MODE - SURFACE MAY BE PAINTED
- 8.8 TB & TF BOLTS SHALL BE TIGHTENED TO THE CORRECT TENSION USING THE FOLLOWING:
  - TIGHEN TO 'SNUG-TIGHT' THEN PERMANENTLY MARKED & TIGHEN A FURTHER 1/3rd OF A TURN PER SECTION 15 AS4100.

S7 ALL BOLTS TO BE MIN Ø12mm HIGH STRENGTH (GRADE 8.8) U.N.O.

USE FIGURED DIMENSIONS IN PREFERENCE TO SCALE. REPORT DISCREPENCIES PRIOR TO FABRICATION OR CONSTRUCTION.

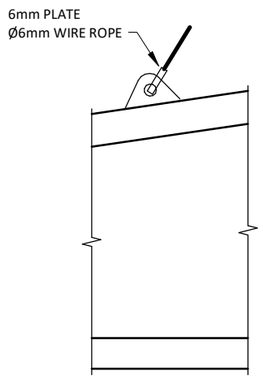
IT REMAINS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE COMPLIANCE WITH RELEVANT CODES AND REGULATIONS IS MAINTAINED AT ALL TIMES.

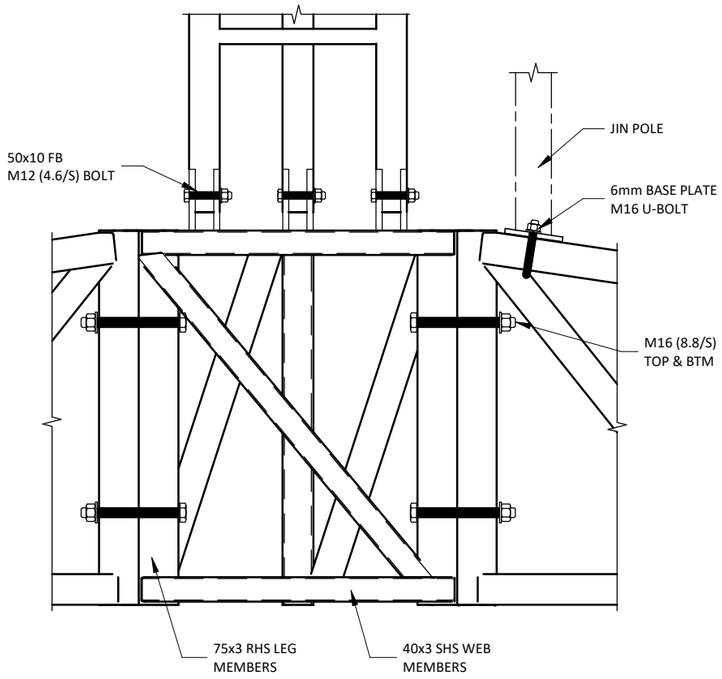
MODCOGROUP
Engineering Services | Building Projects
QBCC Lic: 15042734
Registered Professional Engineers
Member of Master Builders

REV	DATE	ISSUE / AMMENDMENT	BY
1	22/05/18	AS CONSTRUCTED	LS

PROJECT: PORTABLE TRIPOD & GUYED MAST
CLIENT: BOEING DEFENSE AUSTRALIA
DRAWING NAME: 305mm FACE MAST & TRIPOD
DATE: MARCH 2018
PROJECT NO: 1804
SCALE: AS SHOWN
SHEET: A3
DRAWN: DA
CHECKED: LS
DRAWING NO: S03
ISSUE: 1

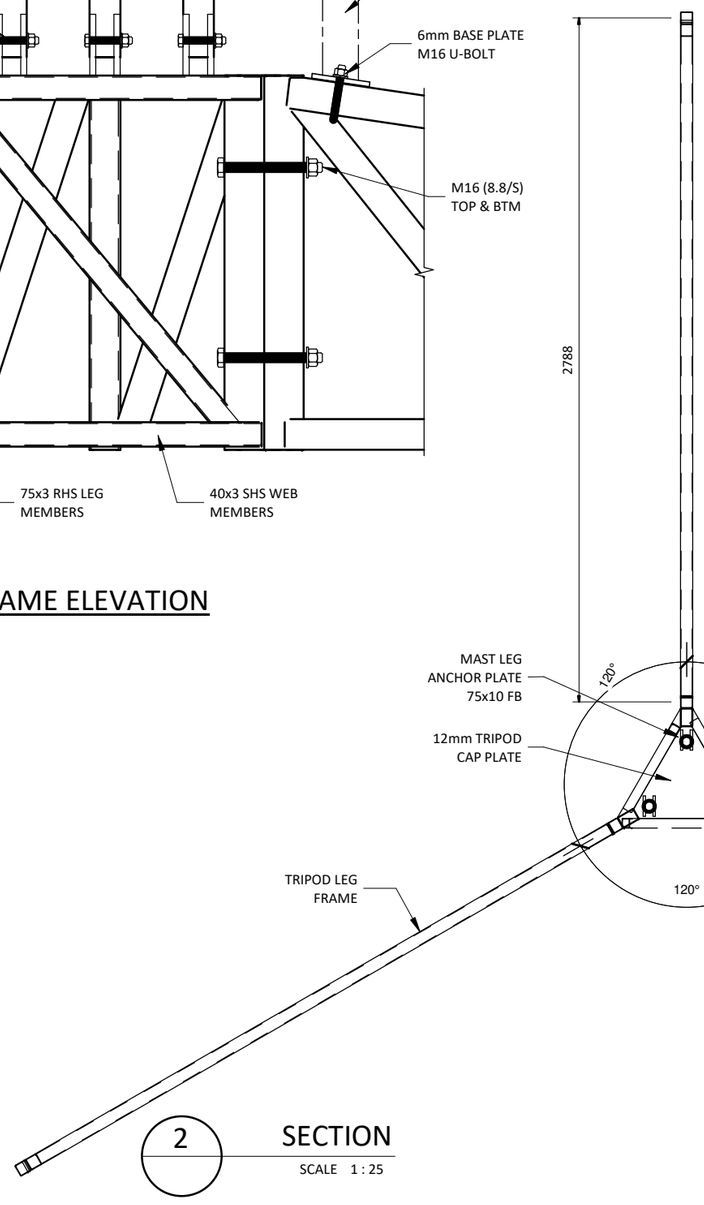
24/05/2018 1:38:11 PM





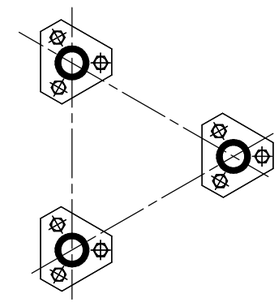
TRIPOLD CENTRAL FRAME ELEVATION

SCALE 1 : 10



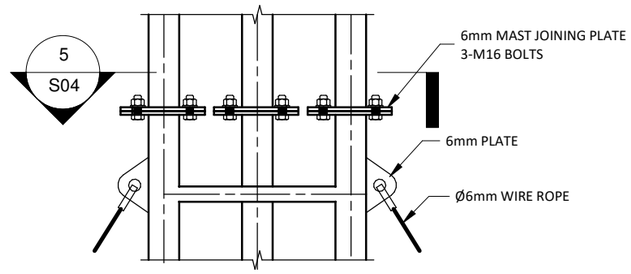
2 SECTION

SCALE 1 : 25



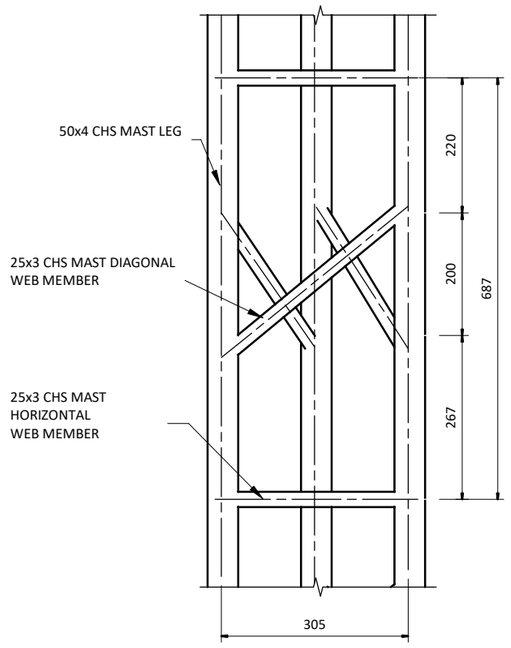
5 / S04 SECTION

SCALE 1 : 10



TYPICAL - MAST CONNECTION

SCALE 1 : 10



MAST ELEVATION TYPICAL

SCALE 1 : 10

USE FIGURED DIMENSIONS IN PREFERENCE TO SCALE. REPORT DISCREPENCIES PRIOR TO FABRICATION OR CONSTRUCTION.

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REV	DATE	ISSUE / AMMENDMENT	BY
1	22/05/18	AS CONSTRUCTED	LS

PROJECT: PORTABLE TRIPOD & GUYED MAST

CLIENT: BOEING DEFENSE AUSTRALIA

DATE: MARCH 2018

SCALE: AS SHOWN SHEET: A3

DRAWN: DA CHECKED: LS

DRAWING NAME: 305mm FACE MAST & TRIPOD DETAIL

PROJECT NO: 1804

DRAWING NO: S04 ISSUE: 1

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Appendix E

SARA Prelodgement Advice

Queensland Government

Department of
State Development, Manufacturing, Infrastructure and Planning

Our reference: 1910-13829 SPL
Your reference: -

29 October 2019

Jessica Whiteing
AECOM Australia Pty Ltd
PO Box 1307
FORTITUDE VALLEY QLD 4006
jaycatearth@bigpond.com

Dear Jessica

Pre-lodgement advice

Thank you for your correspondence received on 17 October 2019 in which you sought pre-lodgement advice from the Department of State Development, Manufacturing, Infrastructure and Planning regarding the proposed development described below.

Reference information

Departmental role:	No role
Departmental jurisdiction:	No jurisdiction

Location details

Street address:	Sir Hudson Fysh Drive, Cloncurry
Real property description:	Lot 36 on RP884323
Local government area:	Cloncurry Shire Council

Details of proposal

Development type:	Development Permit for Material Change of Use for Air Services
Development description:	Proposed Cloncurry Drone Testing Facility

Supporting information

Drawing/report title	Prepared by	Date received
Proposed Cloncurry Drone Testing Facility	Aecom Australia Pty Ltd	17 October 2019

The department has carried out a review of the information provided and the impacts of the proposal. The following advice outlines the matters of interest to the department.

North and North West regional office
Level 4, 445 Flinders Street, Townsville
PO Box 5666, Townsville QLD 4810

1. Planning Act 2016

a) Cloncurry Planning Scheme

It is recommended that advice be sought from Cloncurry Shire Council to determine if the Cloncurry Planning Scheme requires that 'air services' in the Community Purposes Zone and Airport Environs Overlay is assessable development in the Planning Scheme.

b) State Transport Infrastructure

If Council determines that a development application is required, it is considered that if the use is defined as 'air services' it would not require referral to the department under Schedule 20 of the *Planning Regulation 2017*. Schedule 20 specifically refers to the purpose being an 'airport'.

c) Clearing native vegetation

It is noted that the site for 'air services' is located within the Community Purposes Zone and Airport Environs Overlay in the Planning Scheme. It is considered exempt clearing under Schedule 21 of the Planning Regulation 2017, will not require referral for assessment under the Planning Regulation 2017 for an urban purpose in an urban area.

This pre-lodgement advice does not constitute an approval or an endorsement that the department supports the development proposal. Additional information may be required to allow the department to properly assess the development proposal when a formal application has been lodged.

For further information please contact Catherine Hobbs, Principal Planning Officer, on 4758 3412 or via email NQSARA@dsdmip.qld.gov.au who will be pleased to assist.

Yours sincerely

Graeme Kenna
Manager (Planning)