Chapter 13 Environment Strategy Summary

Archerfield AIRPORT

INTRODUCTION

The Archerfield Airport Environment Strategy 2023 (AES) addresses the ongoing environmental management of the airport site. It also provides the framework for responsible environmental management by airport tenants.

This strategy comprises:

- a statement of environmental responsibilities that apply to Archerfield Airport;
- a description of the airport environmental management system, including the process by which AAC implements the AES and related environmental management procedures;
- the AAC corporate environment policy;
- a summary of existing environmental issues, management responses to those issues and an action plan to address them;
- details of the ongoing consultative processes AAC uses to implement and review the AES.

This strategy should be read in conjunction with the Archerfield Airport Master Plan that sets out AAC's 20 year vision for the development of the airport.

ACHIEVEMENTS 1998-2023

AAC has over the period 1998-2023 achieved a number of milestones which have contributed to the improvement of the airport environment.

Studies have been completed, *Environmental Management Procedures* (EMPs) prepared, major drainage works have been implemented, water and energy use has been audited, water conservation measures implemented, a renewable energy project implemented on building 111, the airport environment has been monitored and analysed (and the network of groundwater monitoring wells has been reviewed and expanded), environment protection awareness information made available, and relationships with key stakeholders strengthened.

A summary of these achievements is provided in Chapter 14.

AAC ENVIRONMENTAL MANAGEMENT SYSTEM (EMS)

Environmental responsibilities

AAC maintains the runways, taxiways, grassed areas, and infrastructure; develops new airport facilities; leases sites; and oversees environmental compliance by tenants.

AAC prepares the AES; develops and maintains the airport's environmental management system; undertakes environmental reviews of relevant aspects of the airport; works with the Airport Environment Officer (AEO) and tenants to protect the environment of the airport and assist with the investigation of incidents on the site; liaises with environmental authorities; and provides annual reports to Department of Infrastructure, Transport, Regional Development, Communications and the Arts (DITRDCA) on progress on implementing the AES.

These responsibilities are established through legislation and are set out in Chapter 15 and in the airport EMPs.

AAC tenants are responsible for environmental management of their leased site in accordance with the AES, lease conditions and relevant legislation, standards and guidelines; providing practical assistance to AAC in developing, reviewing and revising the AES; adhering to requirements of the AES; devising environmental management procedures and implementing improvements specific to the lease site; and adhering to appropriate dangerous goods handling and storage standards, and to workplace health and safety standards.

Scope

The Archerfield Airport EMS addresses AAC operations, existing tenants, new facilities, non-aviation tenants and activities, and emergency events occurring on the site.

It comprises the AES, the EMPs, and the management processes that are in place.

AAC works with tenants to ensure that all responsible parties are aware of their environmental obligations, implement environment protection measures, monitor and review their performance, identify areas for

improvement, and manage the potential effects of their activities on an ongoing basis.

AAC also undertakes periodic reviews of the airport environmental management system, including the policies, procedures, and other aspects; to ensure that it meets contemporary requirements, gives an appropriate framework to facilitate environmental management at Archerfield, and is consistent with relevant standards and good practice.

Environmental Management Procedures

The EMPs include procedures for assessing prospective tenants, communication and consultation, emergency preparedness and response, minor and major spill response, environmental awareness and training, tenant environmental reviews, environmental reviews at the end of a tenancy, and assessment of new development works.

Action plan

The actions identified in the AES are summarised in the *Archerfield Airport Environment Action Plan*, which is included in Appendix D.

Communication

AAC communicates with a variety of parties both on the site (tenants and operators) and external to the site.

Key aspects relevant to environmental management include:

- facilitation by AAC of monthly management meetings involving the Airport Environment Officer (AEO), Airport Building Controller (ABC) and AAC personnel;
- facilitation by AAC of quarterly AAEMF meetings with AEO and ABC;
- a rolling program of reviews of tenant operations;
- provision of information on the AAC web site;
- targeted consultation with stakeholders on specific issues;
- community consultation on major projects;
- regular 12 monthly reporting of environmental matters to DITRDCA;
- environmental training and education.

Environmental training

All current AAC staff undertake environmental awareness training on an annual basis. Training is ongoing, responsive to needs, and specific requirements are identified in management, operational and performance reviews.

AAC personnel and tenants will be briefed on the new AES. AAC in tenant reviews will also confirm training that is required, has been completed, and is committed for the coming management period. More detail is provided in section 15.9.

AIRPORT ENVIRONMENT POLICY

AAC recognises the importance of maintaining and where practical, enhancing the quality of the environment on Archerfield Airport and neighbouring areas.

Its commitment and actions to realise this are described in the AAC Corporate Environment Policy in section 15.2 3.

CURRENT ENVIRONMENTAL STATUS, ISSUES, AND ACTIONS

The AES includes for each aspect of the environment, management objectives, a statement of existing conditions, potential impacts, management measures, and targets for the planning period.

The information is based on a review of past studies and more recent investigations of groundwater, surface water, potable water consumption, asbestos and heritage.

More detail is provided in Chapter 16.

Archaeology

The 2021 *Archerfield Airport Heritage Management Plan* (AAHMP) (Australian Heritage Specialists, 2021) provides information about Aboriginal Cultural Heritage and historical (built) heritage.

The site and surrounding area has been highly disturbed since European occupation of the area, as a result of land clearance, stock grazing, and the development and operation of the airport since the late 1920s. The Cultural Heritage assessment identifies an area along Oxley Creek (in the designated conservation area) that has 'low' Aboriginal Cultural Heritage potential.

In addition, the assessment has identified two areas, one in the Mortimer precinct and the second in the Beatty precinct that have potential for discovery of sub surface artefacts from past use and development in the pastoral, development of air transport, and wartime periods.

In these areas, before any sub surface works are undertaken, personnel will be provided with a heritage induction, and measures will be implemented to manage any artefacts that might be discovered.

Built heritage

A hierarchy of heritage significance has been established for the buildings and other elements remaining at Archerfield from these historical phases. These are shown in Figure 28 *Heritage management plan*.

The AAHMP attributes an 'exceptional' grading to the continued operation of the airport, and concludes that from a heritage perspective, the continued operation of the airport takes precedence over other considerations.

The AAHMP has found that the significant historical heritage values remaining at Archerfield Airport are confined to that part of the Beatty precinct which contains the Airport Administration and Terminal building, God's Acre Cemetery, a number of hangars and some buildings associated with historical phases 2 and 3 of the airport.

These buildings and features fall within an area described as the *Heritage Curtilage* (Figure 29).

AAC, and its parent company Miengrove Pty Ltd, have invested more than $3.8M in heritage projects. In 2001 AAC restored the Shell building. In 2009 the Administration and Terminal building again became the airport administration offices with the refurbishment of Level 2 of the building by AAC. In 2015 Level 1 of the Terminal building was significantly refurbished, winning awards in the Heritage and Interior Design categories at the 2015 Brisbane Regional Architecture Awards.

AAC has also refurbished Hangars 5 and 6 and in 2022 it established the Airport History Room in the Administration and Terminal building. The History Room is the home to an evolving archive of records and memorabilia about the history of the airport, and interpretative materials. It is the base for preparation of interpretative displays, and a place for research to be undertaken.

AAC continues to work with Friends of God's Acre to ensure the cemetery is well maintained.

Consideration will be given to heritage aspects in the ongoing management of the airport, and in decisions on future development projects. Where practical, interpretative information about these aspects will also be included in the History Room.

Flora and fauna

The airport environment has been heavily modified since prior to the establishment of the airport, when the site was farmed.

The main operational areas have been subject to a continuous maintenance program that has included mowing, and removal of large trees where these infringe on obstacle clearance standards.

The area fringing Oxley Creek has some remnant values, and this land has been incorporated into a green buffer.

A flora and fauna assessment of the buffer area (shown in Figure 2 *Master Plan vision*, and in Figure 23 *Beaufighter Precinct Structure Plan*) will be undertaken prior to any future development in this area.

AAC will also within the first two years of the operation of this AES prepare an updated ecological assessment of the airport overall, and the area in the vicinity of the airport; and if significant values are identified, will confirm protocols for their management.

Air emissions

There are negligible emissions to air. Establishments which include spray paint booths have appropriate filters installed and these are

maintained in accordance with BCC requirements and are inspected by AAC and the AEO.

Ozone depleting substances

A detailed audit of the airport in 1993/94 identified all equipment containing ozone depleting gasses. All Bromochlorodifluoromethane (BCF) fire extinguishers were removed in 1997, and there are no remaining air conditioners filled with Freon/CFC's.

Ongoing environmental reviews by AAC seek to identify any ozone depleting gasses on site. If any are identified their removal will be negotiated.

Surface water

The airport surface water falls into six sub catchments (Figure 17), and is conveyed ultimately to Oxley Creek by a network of open and piped drains.

A detention basin at the south-west boundary of the airport assists with managing peak flows, and improving water quality prior to discharge to Oxley Creek. Three additional bio-filtration and detention basins have been constructed recently adjacent to the Boundary Road frontage to manage peak flows from future works at Transition Estate.

Gross Pollutant Traps were constructed between Basin 4 and Boundary Road (at Transition Drive) to further improve the quality of stormwater from the Boundary precinct and central sub catchment prior to its release to the BCC drainage system to the north of the airport.

A new basin has been constructed at the northern end of the Ashover precinct (adjacent to Balham Road), treating runoff prior to discharge into the network to the north of the airport.

Rainwater tanks have been installed in a number of tenancies, and in new developments undertaken by AAC.

Groundwater quality

Groundwater quality is monitored annually, and since this practice commenced in 1993, water quality has generally conformed to or exceeded relevant environmental criteria. Localised elevations are addressed progressively with the AEO.

The network of groundwater monitoring wells, and the scope of testing undertaken is reviewed annually to ensure that the program covers all on-airport areas as well as to test contamination coming onto airport from off-site locations. The bore locations and the direction of groundwater flow are shown in Figure 30 *Groundwater*.

Soil

Except for BP Truckstop (which was subject to soil contamination from a leaking storage tank, discovered in 2006, and now contained), there are no known areas of soil contamination that pose a threat to the environment of the airport.

Assessments show that localised contamination levels are within accepted criteria.

Hazardous materials and waste

Existing asbestos is recorded in the airport asbestos register, which is kept up to date as works are completed. A significant quantity of asbestos was removed between 2012 and 2015 as a result of extensive repair and upgrade works to various hangars and buildings.

DITRDCA recommends that AAC determines levels of Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS), which are non-biodegradable chemicals that are highly persistent in the environment (and in the past used in fire-fighting foam and equipment), to gain an understanding of the background levels of PFAS on airport and coming from off-site areas.

AAC currently considers the recommendations within the most recent *PFAS National Environmental Management Plan Version 2.0* – January 2020 published by Heads of EPA Australia and New Zealand and will consider any future versions of these guidelines when they become available.

AAC is also participating in Tranche 2 of the *Commonwealth Airports PFAS Investigation Program* and works are underway.

In addition, periodic ground and surface water monitoring events; and site investigations for new developments have incorporated PFAS testing

into the scope, to identify, track and monitor PFAS datapoints and trends throughout the airport.

Maintenance, new building activities and developments are required to comply relevant national guidelines when appropriate.

The storage and handling of hazardous materials is required to comply with relevant State legislation, and this is assessed during tenant environmental reviews.

Waste is managed and disposed of in accordance with Trade Waste requirements.

Natural resources and energy

Potable water use was reviewed and a management plan formulated in 2008 to minimise consumption and improve efficiency.

When the drought ended the State government abolished the Queensland Water Commission and its permanent water conservation measures on 1 January 2013.

Energy usage is considered as part of the periodic environmental reviews of tenant and AAC operations. AAC is also pursuing opportunities for renewable energy including by expanding the use of roof top solar and by seeking to attract to the airport enterprises involved in research, development and implementation of alternative energy and related technologies.

Opportunities for energy efficiency are also considered in the design, siting and specification of new works by AAC and the assessment of new works proposed by tenants.

Noise

Potential noise sources from on ground activities at Archerfield Airport are limited to maintenance and general commercial activities conducted on site, and ground running of aircraft.

Noise emissions are considered as part of the assessment of new tenancies and ongoing tenant environmental reviews.

To address noise from ground running of aircraft, dedicated engine run-up areas have been established away from the main centres of development.

AAC, in its role as airport operator also engages with stakeholders who are responsible for management of aircraft noise, to identify and implement actions to minimise where feasible the effect of noise on land in the vicinity of the airport.

Further details of this engagement and other actions by AAC are provided in section 16.10. AACs role in the management of aircraft noise within the 30 ANEF contour is addressed in 16.10.5 and 18.12.2.

NEW FACILITIES

AAC is committed to sustainable development.

The environmental performance of refurbished offices in the historic Terminal building is a prime example of this.

Improvements in energy efficiency, water use and indoor environment quality, whilst maintaining the heritage aspects of the building, were paramount to this project.

Since completion, AAC energy consumption has been reduced by almost half, saving around 5000 kg of greenhouse gas emissions per annum.

Water tanks have been incorporated into new developments such as the Corporate Hangars, Hangar 4, Hangar 13, the aviation/warehouse and office at site 676 in the Beaufighter precinct, the Aviall building at site 111, and the new logistics facility at site 581 in the Transition. estate.

AAC requires new tenants to identify all potential environmental issues or impacts, and assists them to clarify applicable legislative requirements and best practice management guidelines and training that will be applied.

AAC's EMPs include procedures to manage this process, and include input from the AEO and ABC (if required).

Chapter 14
Overview of the AES

Archerfield AIRPORT

14.1 SCOPE OF THE ENVIRONMENT STRATEGY

Under the *Airports Act 1996* and regulations, AAC is required to develop and implement an AES that:

- sets out AAC's objectives for the environmental management of the airport;
- identifies environmentally significant areas within the airport;
- identifies sources of environmental impact associated with airport operations;
- defines studies, reviews and monitoring to be carried out in relation to the environmental impact of the airport;
- sets timeframes for completion of audits and reviews;
- sets out specific measures to be implemented by AAC to address existing or potential impacts, and timeframes for completion of these; and
- provides details of consultation undertaken in preparing the AES.

14.2 OVERVIEW OF 2023 AES

The AES addresses the management of environmental issues arising from airport activities and operations.

It covers the ongoing environmental management at the airport arising from the use of the airport site.

The relationships between the various elements of the AAC environmental management system are illustrated in Figure 27, in section 15.4.

This strategy comprises:

- a statement of environmental responsibilities that apply to Archerfield Airport;
- a description of the Airport Environmental Management System, including the process by which AAC will implement the AES and related environmental management procedures;
- the AAC corporate environment policy;
- a summary of existing environmental issues, management responses to those issues and an action plan to address them;
- details of the ongoing consultative processes AAC will adopt in implementing and reviewing the AES.

This AES builds on the previous strategies (1999, 2000, 2005, 2010, 2012 and 2017).

14.3 ENVIRONMENTAL MANAGEMENT ISSUES

The principal environmental management issues at Archerfield Airport are:

- management of new development works to minimise and ameliorate impacts on the environment;
- conservation of any significant flora and habitat values along Oxley Creek;
- protection of storm water and groundwater quality from contamination by pollutants from the airport;
- encouraging the efficient use of water and energy;
- ensuring that all chemicals on airport are appropriately handled, used, stored and disposed of;
- containment and management of spills;
- appropriate containment and handling of all asbestos in buildings and plant on airport (as identified in the asbestos audit and register);
- protection of any cultural and built heritage values (pre and post contact); and
- ensuring that airport tenants are aware of their environmental obligations and comply with all relevant requirements.

14.4 OVERVIEW OF ACHIEVEMENTS 1998-2023

Over the period 1998-2023, AAC has achieved the following milestones. These have all contributed to improvements to the management of the airport environment.

TABLE 9: SUMMARY OF ACHIEVEMENTS 1998-2023 (AES)

Activity	Date
Environmental management system	
AAC adopted new airport *Environmental Management Procedures* (EMPs).	2003
AAC reviewed EMPs, and identified minor revisions.	2010 and 2016
Heritage	
AAC has supported the restoration works by Friends of God's Acre, including with donation of funds and provision of maintenance services over the past 26 years.	1998 onwards
AAC restored the Shell building.	2001
The *Cultural heritage assessment and management plan* for the airport was completed.	2003
AAC purchased in 2000 and refurbished the 2nd floor of the neglected Airport Terminal building and relocated its administration offices to the upper floors of the building.	2009

Activity	Date
Brisbane Regional Commendation awards for both Heritage and Interior Architecture for refurbishment of the middle floor of the Airport Terminal building.	2015
Refurbishment of the ground floor public areas, and painting and waterproofing of the exterior of the Airport Terminal Building in preparation for Brisbane Open House.	2015
Refurbishment and repurposing of sites 3 (by Tenant), 5 and 6 which have heritage value.	
AAC prepared a Heritage Management Plan for Archerfield Airport, replacing the plan prepared in 2001.	2021
AAC established the airport History Room in the Administration and Terminal building.	2022
Flora and fauna	
Fire Ant control has been undertaken by helicopter and motorcycle broadcasting.	2001 onwards
Creation of a conservation zone in the south-west part of the airport, adjacent to Oxley Creek, to provide a permanent buffer.	2009
Air quality	
Existing data on airshed quality obtained from the DESI (formerly DERM/EPA) monitoring station at Rocklea.	2004
Inventory of existing airport tenants and users was compiled as a baseline for possible future air quality assessments.	2004
Air quality testing at site 400.	2015
Dust	
Wirraway Avenue was reconstructed and resurfaced.	2000
Beaufighter Avenue was sealed and extended into the Beaufighter precinct.	2000
Dust from Site 670-672 was monitored over a six month period.	2015
AAC commissioned URS consultants to conduct an assessment of dust from Site 670.	2015
Various dust, erosion and sediment control initiatives implemented within the Beaufighter precinct.	Ongoing
Surface water management	
The former open drainage line through the Beaufighter, Boundary Road, Runway, and Beatty precincts (which was subject to significant scouring) was piped, and silt traps and dissipation structures installed to moderate peak flows and manage water quality prior to discharge to Oxley Creek.	2001
A significant new stormwater detention basin was constructed in the Beaufighter precinct, treating stormwater prior to its discharge to the Oxley Creek.	2001
The stockpile areas for the recycling facility at site 670-672 on Beaufighter Avenue drain to a sedimentation basin for treatment prior to discharge to the main drainage system on airport. Water is recycled for dust suppression and irrigation purposes.	2001
A triple interceptor was installed to treat water from the aircraft washdown bay. The washdown bay was signed to encourage its use.	2002

Activity	Date
The second wash down bay (at the eastern end of Taxiway Bravo) was decommissioned.	2002
Swale drains were constructed along the southern boundary of the Beaufighter precinct.	2003
The open drain running north-west from the Runway precinct, under the 04/22 runways to Boundary Road was upgraded with the piping of the section near the runways, and the creation of a detention basin in the Boundary precinct. This will modulate peak flows entering the drainage system through Rocklea, which ultimately discharges to Oxley Creek approximately 2 km downstream of the airport.	2008
Stormwater tanks were provided for the new corporate hangars on Wirraway Avenue, and site 676 constructed by AAC on Beaufighter Avenue to retain rainwater for use on site, and assist with reducing peak discharge volumes to Oxley Creek.	2007-8
Small rock landscaping has been introduced to localised sections of open drains showing evidence of minor soil erosion.	1998 to present
Civil construction work, which included stormwater and associated services to improve drainage at the northwest end of the airport was completed. The works included construction of three stormwater basins.	2014
Underground stormwater drains around the southern and eastern areas of the airport were examined by CCTV camera and significant repair/upgrade work was carried out to improve drainage.	2014/2015
Open earth drains have been periodically slashed and weeds removed.	Ongoing
Surface water quality monitoring in open drains and at drain outlets has been undertaken on an annual basis.	Ongoing
Groundwater	
The network of groundwater quality monitoring wells across the airport was serviced and upgraded.	2004
Well No. 9 was relocated, to fit with redevelopment in the Beaufighter precinct.	2004
A new sampling and analysis program was implemented.	2004
Simmonds & Bristow commissioned to review groundwater monitoring program.	2012
Six new groundwater monitoring wells were installed between 2012 and 2015.	2015
The annual groundwater monitoring program by AAC has continued throughout the planning period with an increased number of sampling locations and analysis for contaminates of potential concern (CoPC).	Ongoing
Issues identified from analysis have been assessed in consultation with the AEO and will continue to be addressed over the planning period.	Ongoing
Soil contamination	
The former Airport Rescue and Fire Training Area was closed and remediated.	1994
The former battery recycling site was remediated by removal of the contaminated soil and reclamation with clean fill.	1997
The underground storage tanks at the Shell Building were decommissioned and the site remediated.	1998

Activity	Date
The former Mobil fuel depot at Site 12 was decommissioned and the site remediated.	
Soil tests were carried out at Site 110 (formerly occupied by Flying Colours).	1999
Soil tests were carried out at Sites 9 and 635.	2013
Soil tests were carried out at Site 668.	2014
Various soil investigations completed throughout the airport the location and results which are tracked in the Environment Site Register (ESR), Triggers for such assessments include new building activities, change in use or lease end requirements.	2015-present
Hazardous materials and waste management	
Asbestos Audits Queensland Pty Ltd prepared an *Asbestos Materials Report and Register for Archerfield Airport*. The report identified asbestos in AAC owned buildings, and was updated regularly as buildings come into AAC ownership until 2012.	2003 to 2012
A Management Plan and risk assessment was added to the asbestos register.	2006
Asbestos Audits Queensland Pty Ltd prepared an *Asbestos Management Plan and Register for Archerfield Airport, which* incorporated new buildings and recognised 2011 codes of practise. Update of the plan is ongoing.	2009
Cyclical reinspection's of low-density fibrous ACM, undertaking any recommended preventative maintenance measure or remedial works.	2012, updated in 2015 and 2022
AAC created a *Chemical and Hazardous Materials Register* for its grounds maintenance and works operations.	
AAC has included in its tenant inspections consideration of materials storage, handling, waste management, and disposal.	Ongoing
BCC regularly tests sewage entering its treatment system from the airport. Any non conformances are reported to AAC and the tenant (if applicable) for action.	Ongoing
Removal of a significant volume of ACM from Airport, as a result of various building activities, at the following sites; 003, 004, 021, 025, 219-A, 105, 110, 013, 014, 108 & 109.	Ongoing
Natural resources and energy	
AAC installed rainwater tanks for the corporate hangar development on Wirraway Avenue and the warehouse and office on Beaufighter Avenue.	2007-8
AAC installed a 3000L Rainwater Tank for the Aviall warehouse on Ditchmen Avenue.	2012
Water meters have been upgraded to improve monitoring of consumption.	2008
Efficient water fittings have been installed in AAC buildings.	2007
AAC developed a *Water Efficiency Management Plan* (WEMP) in accordance with Queensland Water Commission requirements, in consultation with tenants and Brisbane Water. Subsequent legislation abolished The Queensland Water Commission and its Permanent Water Conservation Measures on 1 January 2013.	2008
The airport has secured a number of businesses that recycle materials and equipment for reuse in construction and manufacturing. These include Veolia Environmental Services, Alex Fraser Group and Q-Crete. These operations	1998-present

Activity	Date
promote the reuse of resources, and reduce the energy required to produce materials for new applications.	
Use of natural resources and energy is considered in tenant assessments.	1998-present
AAC installed a solar array as part of the building 111 development.	2012
Consideration of solar generation in future developments (where feasible).	Ongoing
Noise	
Noise emissions from tenancies on airport are managed in accordance with the EMPs and any site environmental management plan in place for their operation.	Ongoing
Noise resulting from building activities is managed through project specific Construction Environment Management Plans (CEMP).	Ongoing
New facilities	
EMPs have been developed for new tenancies, renewal of existing tenancies, and for assessment of major works and are periodically updated.	2003-present
Corporate hangars were constructed, incorporating rainwater harvesting.	2006
A warehouse and office development incorporating energy efficiency measures and rainwater harvesting was constructed by AAC at site 676.	2008
A new warehouse and office development incorporating energy efficiency measures and rainwater harvesting were constructed at site 111.	2012

Chapter 15 Environmental Management Framework

Archerfield AIRPORT

15.1 REGULATORY FRAMEWORK

15.1.1 Airports Act 1996

The *Airports Act, 1996* and the associated *Airports (Environment Protection) Regulations, 1997* provide the primary mechanism for Government to ensure the ongoing responsible environment management of Archerfield Airport.

This legislation requires AAC to produce and implement an AES.

All operators of undertakings on the airport, including AAC, have an obligation to comply with the AES, the *Airports Act 1996* and Regulations.

AAC has the additional obligation to prepare the AES, monitor pollution levels at the airport in accordance with its AES and report the results of this monitoring on an annual basis.

The first AES for Archerfield was approved on 15 November 1999. In December 2000, an amended version was published, including the approved 2019 ANEF for Archerfield Airport. The AES for 2004-2009 was approved on 18 January 2005, the AES for the period 2010-2015 was approved on 26 March 2010, and an updated version for the period 2011-2016 was incorporated into the 2011-31 Master Plan. The 2017 AES was approved on 15 July 2017.

Airport operators and airport regulators

The Act provides a system for separating the roles of the airport operator and airport regulator.

In the case of Archerfield Airport, the Commonwealth Department of Infrastructure, Transport, Regional Development, Communications and the Arts (DITRDCA) and the Civil Aviation Safety Authority (CASA) provide the regulator role. Archerfield Airport Corporation being the Airport Leasing Company (ALC) undertakes the airport operator role.

AAC as airport operator is responsible primarily for activities that take place on the ground and within airport confines. AsA has the principal responsibility for aircraft operations.

AAC recognises that operational issues at times need to be addressed jointly by AAC and AsA, and AAC is proactive in identifying relevant aspects and potential solutions as appropriate.

Airports (Environment Protection) Regulations 1997

The regulations:

- set limits for environmental pollution of air, water and soil, and for noise emissions;
- set out the duties everybody operating at the airport must comply with; and

- authorise the monitoring and remediation of breaches of environmental standards.

The Regulations do not apply to pollution generated by aircraft, or to noise generated by an aircraft in flight or when landing, taking off or taxiing at the airport.

All users of Archerfield Airport are required under the *Airports (Environment Protection) Regulations 1997* to:

- avoid polluting the environment
- preserve local biota and the ecosystems and habitats of native species
- preserve existing aesthetic, cultural, historical, social and scientific (including archaeological and anthropological) values of the local area;
- ensure there are no adverse consequences for endangered or vulnerable flora or fauna species or endangered ecological communities;
- ensure there are no adverse consequences for sites of indigenous significance on the airport site; and
- prevent the generation of offensive noise.

Environment Protection and Biodiversity Conservation (EPBC) Act 1999

The Commonwealth EPBC Act provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places.

The Act applies to the following areas or matters of national environmental significance:

- world heritage sites;
- national heritage places;
- wetlands of international importance (often called 'Ramsar' wetlands after the international treaty under which such wetlands are listed);
- nationally threatened species and ecological communities;
- migratory species;
- Commonwealth marine areas;
- the Great Barrier Reef Marine Park;
- nuclear actions; and
- a water resource, in relation to coal seam gas development and large coal mining development.

The Act aims to:

- provide for the protection of the environment, especially matters of national environmental significance;
- conserve Australia's biodiversity;
- protect biodiversity internationally by controlling the international movement of wildlife;
- provide a streamlined environmental assessment and approvals process where matters of national environmental significance are involved;
- protect Australia's world and national heritage; and
- promote ecologically sustainable development.

The Act is triggered when a proposal has the potential to have a significant impact on a matter of national environmental significance.

The airport is on Commonwealth land, so any proposal that is likely to have significant impact on the environment also requires assessment under the EPBC Act.

Guidance on the assessment of environmental values (including heritage), likely impacts (and mitigation), and whether approval is required under the EPBC Act is provided in *Significant Impact Guidelines* published by the Commonwealth (Guidelines 1.1 and 1.2).

The Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) administers the Act and coordinates the assessment of potential impacts.

After consultation and assessment, the Minister for the Environment (or delegate) is responsible for deciding whether a project needs approval under the Act, and if it does, whether it is allowed and under what conditions.

Airport Environment Strategy

Under the *Airports Act 1996* AAC is required to produce and implement an Airport Environment Strategy. The Strategy must:

- set out AAC's objectives for the environmental management of the airport;
- identify environmentally significant areas within the airport;
- identify sources of environmental impact associated with airport operations;
- define studies, reviews and monitoring to be carried out in relation to the environmental impact of the airport;
- set timeframes for completion of audits and reviews;
- set out specific measures to be implemented by AAC to address existing or potential impacts, and timeframes for completion of these; and

- provide details of consultation undertaken in preparing the AES.

The previous AES was approved in 2017, after completion of the consultative processes set out in the *Airports Act*.

State law

AAC is required to comply with relevant State legislation and regulations, to the extent that these do not conflict with the Airports Act or Regulations.

State laws concerning workplace health and safety, waste management (including trade waste), motor vehicle pollution, emissions of substances that deplete stratospheric ozone, or the use of a pesticide are examples that are relevant to activities at Archerfield.

Compliance requirements

All operators of undertakings on the airport, (AAC and tenants), have an obligation to comply with the *Airport Environment Strategy*, the *Airports Act* and Regulations. It is an offence to cause deliberate damage to the environment.

Legal register

AAC has identified in Appendix A legislation and regulations relevant to its operations.

The register of legal requirements will be kept up-to-date through liaison with the Airport Environment Officer (AEO) at least monthly during the regular Airport Environmental Management Forum (AEMF).

15.2 ARCHERFIELD AIRPORT CORPORATION ENVIRONMENT POLICY

Environmental management at Archerfield is guided by the AAC environment policy.

In developing and managing Archerfield Airport, AAC will:

- identify and manage the environmental issues that are within AAC's responsibility;
- comply with relevant environmental legislation and regulations;
- establish environmental objectives and targets to minimise the environmental impact of the airport;
- measure, monitor and improve upon the environmental performance of the airport;
- promote to AAC's employees, tenants, customers and neighbours its commitment to sound environmental management.

These principles have been taken into account when preparing this AES.

Archerfield Airport Corporation Environment Policy

Archerfield Airport is operated and developed by Archerfield Airport Corporation (AAC). AAC is a private company which in 1998 acquired the long term lease to the airport.

AAC has overall responsibility for environmental management on the airport. Airport users, including tenants have responsibility for appropriate environmental management of their activities.

AAC recognises the importance of maintaining and where practical, enhancing the quality of the environment of Archerfield Airport and neighbouring areas.

AAC will:

- *operate the airport in an environmentally responsible manner*
- *minimise any adverse environmental impacts of its operations*
- *comply with all legally binding environmental management requirements*
- *encourage environmental responsibility amongst its employees and contractors*
- *encourage environmental responsibility amongst airport tenants and users*
- *strive to continually improve environmental performance of all aviation and non-aviation operations on the site.*

To achieve this AAC will:

- *establish and maintain procedures and practices to comply with all applicable environment laws and regulations*
- *ensure that this policy, management procedures and environment protection actions are communicated to all relevant personnel, including AAC staff, airport tenants, airport users and contractors*
- *conduct regular reviews of all site operations to identify areas which are or may have the potential to breach a regulatory requirement or which require improvement*
- *conduct regular monitoring and analysis of the airport environment to identify potential issues and ensure compliance with relevant regulations*
- *implement environmental management and operating procedures to ensure that the development of Archerfield Airport is carried out in an environmentally sound manner*
- *consult as appropriate with authorities and the community to ensure that the views of external parties regarding environmental issues are considered when making decisions*
- *ensure that AAC staff are appropriately trained and briefed on compliance and regulations*
- *ensure that tenants and users of the airport are adequately informed of their obligations, compliance and regulatory requirements.*

AAC managers are accountable to the joint Managing Directors to ensure that this policy is implemented.

15.3 ENVIRONMENTAL MANAGEMENT SYSTEM

AAC's system for management of environmental issues at Archerfield Airport follows the principles and format of *AS/NZS ISO 14001:2016 Environmental Management Systems-Requirements with guidelines for use.*

The management system provides a structure for identifying environmental issues, developing environmental management plans to manage these issues, and a method to review and measure environmental performance, and fostering of continuous improvement.

It applies to all operations carried out at Archerfield Airport, encompassing both aviation and non-aviation related activities. As a minimum, it provides a system to ensure that operations for which AAC is responsible will comply with all applicable legal requirements, and where deemed necessary, exceed these requirements.

15.4 ENVIRONMENTAL ROLES AND RESPONSIBILITIES

The roles and responsibilities of AAC, tenants, the Airport Environment Officer (AEO), and the Airport Building Controller (ABC) are set out below. The relationships between the various stakeholders are illustrated in Figure 27.

15.4.1 AACs responsibility

AAC is responsible for:

- overall environmental management on the airport;
- preparation of the AES;
- overseeing implementation of the AES, including informing tenants of their obligations under the Strategy;
- carrying out environmental studies, reviews and monitoring by appropriately qualified and experienced personnel;
- conducting reviews of AAC's own operations, such as maintenance of runways, taxiways, aprons and grassed areas;
- development and management of new airport facilities, such as runways and airport infrastructure;
- preparing Environmental Management Procedures (EMPs) for AAC activities and developments;
- leasing sites to tenants (and setting environmental management requirements via lease conditions, where appropriate);
- adhering to appropriate dangerous goods handling and storage standards, and to workplace health and safety standards; and
- monitoring pollution levels (for aspects defined in the AES) and reporting the results of this monitoring on an annual basis.

AAC management also undertakes periodic reviews of the airport environmental management system to confirm that it is consistent with the current version of AS/NZS ISO 14001 *Environmental Management Systems-Requirements with guidance for use.* The timing of the review process is included in the *Environment Protection Action Plan* in Appendix D.

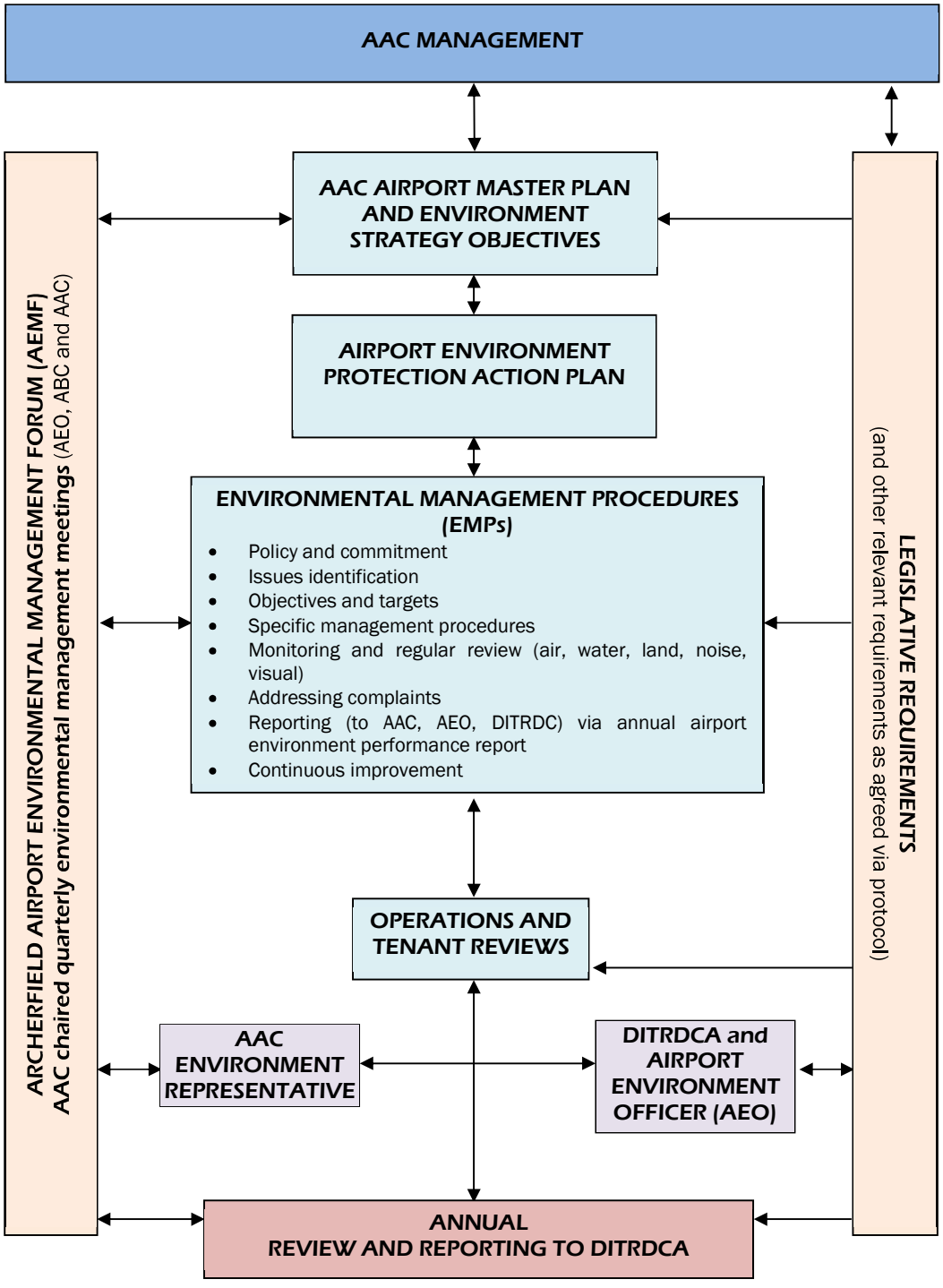


Figure 27. **Overview of environmental management process at Archerfield Airport**

Under common law as a landlord AAC may also conduct pollution and contamination tests, order remedial works, or stop activities in the event of environmental harm. Under the *Airports (Environment Protection) Regulations 1997*, the Commonwealth can also assist AAC in having tenants comply with tests, implement remedial works, or stop harmful activities.

15.4.2 Responsibilities of tenants of AAC

Tenants on the site can be broadly divided into four categories:

- aircraft maintenance and service facilities;
- aircraft charter operations;
- airport passenger facilities and flight schools; and
- sites carrying out non-aviation related activities, such as industry, warehousing, service stations and shops.

Tenants are responsible for:

- environmental management of their leased site in accordance with the AES, lease conditions and relevant legislation, standards and guidelines;
- providing practical assistance to AAC in developing, reviewing and revising the AES;
- adhering to requirements of the AES, including EMPs where applicable;
- implementing improvements relevant to the leasehold;
- devising environmental management procedures specific to the lease site;
- implementing guidelines set by AAC;
- meeting the requirements of their lease agreements, including during their operations and at end of lease; and
- adhering to appropriate dangerous goods handling and storage standards, and to workplace health and safety standards.

Most leases entered into, or renewed since 1999 stipulate the tenants' environmental responsibility and the requirement to conform to the AAC Environment Policy and AES.

15.4.3 Airport Environment Officer (AEO)

The AEO is part of DITRDCA and fulfils the role of environmental regulator on the airport.

The AEO monitors operations on airport sites and where necessary, enforces the requirements of the Act and its subordinate legislation.

The AEO works cooperatively with AAC and tenants, supporting and ensuring compliance with environmental standards. The AEO can apply financial penalties to environmental offenders.

AAC may also conduct pollution and contamination tests, order remedial works or stop activities in the event of environmental harm.

The AEO investigates incidents relating to pollution. The AEO can require any operator on the airport to carry out works; reduce or cease generation of pollution.

If an operator cannot meet the standards detailed in the Regulations due to local conditions, but the operator believes the operations will still comply with the general objectives of the Regulations, the operator can apply to the AEO for an authorisation, allowing the non-compliance to continue for a specified period. If the AEO is satisfied that the authorisation is warranted and the objectives of the Regulations can be achieved, then the authorisation may be granted.

If necessary, the AEO can issue an environmental protection order or infringement notice to any operator on Archerfield Airport who has committed an offence. If the offence is considered serious, the operator and individuals involved can be prosecuted.

15.4.4 Building approval requirements

DITRDCA has appointed an Airport Building Controller (ABC) who is responsible for ensuring that all activities at Archerfield Airport meet the appropriate building and engineering standards.

The ABC must be notified in writing of all proposed construction and building activities; including minor repairs, alterations, and signs. Some minor works are exempt from formal approval.

Building and construction must comply with the *Building Code of Australia* (BCA) as operational in Queensland. Where the BCA does not apply (for example in relation to civil engineering works) the relevant Australian Standard or international standard will apply. The ABC identifies the appropriate standards.

A Certificate of Compliance for Occupancy is required for all building or construction work that requires formal approval by the ABC.

A Certificate of Compliance for Occupancy is issued before a building can be occupied, and a Certificate of Compliance for Use is required before engineering works, electrical works, or other utility services can be used.

The consent of AAC is required before the ABC can approve a development application. AAC is responsible for ensuring that all development proposals are consistent with the Master Plan and AAC's planning objectives. AAC will in each

case assess also the impact of the proposal on infrastructure and the operations of the airport, and may impose conditions on building activities.

15.4.5 AAC environment representative

In addition to facilitating the Airport Environmental Management Forum (AEMF), the appointed AAC environmental representative is also responsible for:

- working with the Airport Environment Officer on issues associated with Archerfield Airport;
- preparing associated documentation;
- making recommendations to the Managing Director, AAC;
- ensuring that AAC is compliant with relevant legislation and laws;
- working with the airport community to ensure that compliance is being achieved;
- conducting or coordinating environmental reviews in accordance with policy; and
- applying policy initiatives and identified strategies.

The following table sets out who at Archerfield is responsible for ensuring that the environment protection obligations are fulfilled and environmental management procedures are followed.

Items marked with an asterisk need to be addressed by each tenant in their environmental management plans and other initiatives. Their compliance will be assessed during the cyclical tenant reviews.

TABLE 11: ENVIRONMENTAL RESPONSIBILITIES

Function	Responsibility
Policy and strategy-direction	
Defining environmental policies, and modifying existing policies	AAC Board
Determining objectives, priorities and targets in accordance with policy	AAC Board
Determining environmental management procedures in accordance with the policy direction, objectives, priorities and targets	AAC management
Construction and maintenance activities	
Securing building and environmental approvals	Proponent (typically AAC or tenant)
Assessing contractor's abilities to meet AAC's environmental requirements	For AAC works-Airport Environment Manager * For works by tenants-each tenant, AAC ABC and AEO
Ensuring compliance with environmentally sound work practices	For AAC works- Airport Environment Manager

Function	Responsibility
	* For works by tenants-each tenant, AAC ABC and AEO
Operation phase	
Compliance with State regulated waste, hazardous good and other requirements	AAC for AAC operations. * Tenants and contractors are responsible for their own activities. AAC and AEO monitor for compliance.
Containment of chemicals, fuel and oils	AAC for AAC operations (staff and contractors). * Tenants and their contractors are responsible for their own activities. AAC and AEO monitor for compliance.
Awareness and training	
Promoting awareness of environment protection and management requirements amongst AAC personnel and tenant representatives.	AAC management
Promoting environmental awareness and compliance within each tenant's operation	* Each tenant, with assistance from AAC and AEO
Induction of AAC personnel	AAC management
Training of AAC personnel	AAC management
Induction of tenant personnel	* Each tenant
Training of tenant personnel	* Each tenant
Ensuring that AAC is conversant and compliant with relevant legislation, including changes	Airport Environment Manager
Ensuring that tenants are aware of changes in environmental management requirements	AAC and AEO
Ensuring compliance with legislation	AAC for AAC activities and works * AAC and AEO for tenants
Monitoring and review	
12 monthly reviews of AAC operations, surface water and groundwater	AAC
Cyclical tenant reviews, with the review schedule determined according to an assessment of risk to the environment (12 monthly for tenants with hazardous materials on site)	AAC and AEO
Annual Airport Environment Performance report to DITRDCA.	AAC
Revision of EMP documentation to reflect findings of reviews of AAC operations and tenancies	AAC management
Maintenance of records of overall condition of airport environment	AAC
Monitoring and reporting of emissions from tenancies	* Each tenant is responsible for monitoring and reporting on their

Function	Responsibility
	emissions, and making such reports available to AAC /AEO on request.
Quarterly AAEMF meetings between the AAC, AEO and ABC.	Minutes of meeting maintained by AAC
Monthly project coordination meetings between the AAC, AEO and ABC.	AAC
Emergency response	
Spill containment airside, and from AAC operations.	AAC
Spill containment within tenancies	* Each tenant
Spill containment on common airport land (where caused by a person other than a representative of the AAC).	The person causing the spill (enforced by AAC and the AEO)
Document control	
Ensuring that the key users of the EMPs have up to date copies of the EMPs.	Airport Environment Manager.
Acquiring and disseminating environmental management information.	Airport Environment Manager.
Maintaining EMPs up to date (from replacement pages provided by AAC).	Each person on the Document Distribution Register.

15.5 ENVIRONMENTAL ASPECTS AND POTENTIAL IMPACTS

The potential impacts of airport activities (to the extent these are required to be addressed by this strategy) on aspects of the environment is summarised in the table below.

The activities have been grouped into three phases:

- construction;
- operation (AAC and tenants); and
- emergency action.

As part of the ongoing management of the airport environment, site and activity specific assessments are required. The methodology for doing this is provided in the EMPs.

TABLE 12: SUMMARY OF ENVIRONMENTAL ASPECTS AND POTENTIAL IMPACTS

Activity	Aspect	Impact or potential impact
Construction activity		
Transportation of machinery and materials.	Increased traffic on nearby roads. Dirt on roads.	Nuisance noise. Nuisance dust. Disruption to local traffic. Possible importation of weeds and plant pathogens.

Activity	Aspect	Impact or potential impact
		Possible importation of Fire Ants. Contamination of stormwater. Pollution of surface water.
Operation of machinery/equipment on site.	Increased noise levels. Production of dust.	Nuisance noise. Air pollution. Nuisance dust (possible impacts on aviation and ground based activities, on and off airport).
Plant and vehicle wash down.	Discharge of wash down water contaminated with oils, fuels etc.	Contamination of soil, surface water and/or groundwater. Possible spread of weeds and plant pathogens. Possible importation of Fire Ants via contaminated plant or vehicles.
Site clearance.	Vegetation removal.	(Low) potential loss of habitat and/or significant plant species along Oxley Creek.
	Heritage values.	Potential disturbance of heritage or archaeological sites.
	Surface destabilisation.	Sediment pollution of receiving waters (Oxley Creek). Nuisance dust (possible impacts on aviation and ground based activities, and tracking of material onto roads, on or off airport).
Demolition of buildings, structures or plant containing asbestos.	Human health.	Potential for impacts on health if asbestos material is not appropriately contained and/or disposed of.
Excavation/levelling and construction of stormwater drains.	Increased sediment discharge in runoff from surface disturbance.	Sediment pollution of receiving waters.
On site storage of fuel and oil.	Major spillage or leakage of fuel.	Soil, surface water and/or groundwater contamination.
Refuelling plant and vehicles.	Minor spillage or leakage of fuel.	Soil, surface water and/or groundwater contamination.
Concrete work on site.	Increased suspended matter in stormwater runoff.	Sediment pollution of receiving waters.
Landscaping works.	Flora and fauna.	Importation or spreading of soil or plants contaminated by Fire Ants.
Earthworks.	Increased suspended matter in stormwater runoff.	Sediment pollution of receiving waters.

Activity	Aspect	Impact or potential impact
	Release of acid sulphate soils-potentially found at or below the 5m (AHD) contour.	Degradation of Oxley Creek environment.
Airport operation (AAC and tenants)		
Storage and use of chemicals, fuel, oils (including hazardous and dangerous chemicals).	Escape of chemicals to the environment from spillage or leakage.	Health impact on site personnel and neighbours. Potential pollution of soil, air, surface, and/or groundwaters.
Aircraft wash down.	Discharge of wash down water contaminated with oils, fuels etc.	Contamination of soil, surface water and/or groundwater.
General waste from airport activities.	Production of general waste and litter.	Potential stormwater contamination.
	Tracking of waste from generation to disposal.	Potential visual pollution. Potential nuisance or hazard to aviation activities (FOD).
Hard rubbish generated by airport activities.	Disposal of waste off site.	Use of landfill space.
Generation and handling of regulated waste.	Containment of waste. Tracking of waste from generation to disposal.	Potential occupational health and safety issue.
Ground running of aircraft.	Aircraft noise.	Nuisance noise in nearby areas.
Industrial plant and equipment used on site.	Machinery noise.	Health risk to site workers. Nuisance noise to nearby sensitive receptors.
Maintenance work, office operations and staff facilities.	Production of general waste and litter.	Use of landfill space.
Activities with emissions to air.	Discharge of pollution to the atmosphere.	Potential effects on air quality.
Handling of dangerous goods.	Accidental discharge via spill	Pollution of soil, air, surface water and/or groundwater.
Handling of hazardous goods.	Accidental discharge via spill.	Pollution of soil, air, surface water and/or groundwater.
Emergency actions		
Incidents causing material spills.	Escape of materials to the environment from spillage or leakage.	Pollution of soil, air, surface water or groundwater.
Identification of Fire Ant in plants or soil on airport.	Introduction of Fire Ant via imported plants or soil.	Containment and destruction in accordance with government requirements.

15.6 ENVIRONMENTAL OBJECTIVES AND TARGETS

Objectives and targets for each aspect of the airport environment are set out in the sections that follow.

Actions and the timing of their implementation are summarised in the *Airport Environment Protection Action Plan* in Appendix D.

15.7 TENANT ENVIRONMENTAL REVIEWS

AAC will identify environmental issues on the airport by conducting regular reviews of its own operations and works and those of its tenants on a cyclical basis.

In the case of tenants with hazardous goods, the reviews will be undertaken on an annual basis. The timing of reviews for other tenancies will be determined from an assessment by AAC of the likely risk to the environment of the tenant activities.

The reviews will identify:

- level of compliance with environmental regulations, guidelines or standards;
- any unacceptable work practices;
- any opportunities for minimising the use of natural resources or generation of waste; and
- any environmental training that may be required by the organisation being reviewed, under the terms of their lease.

Each environmental review will identify any operations or works that are, or could cause a breach of the regulations and also identify possible environmental improvements.

Issues and actions identified by previous environmental reviews will also be checked to ensure that they have been appropriately addressed. Where a need for environmental training is identified, this be included in the actions, and followed up. Further information on environmental training is provided in section 15.9.

Environmental review results will be compiled into a summary report. Where required, management plans will be devised. For each case where an environmental issue is identified, the following key steps will be taken:

- following clear definition of the issue(s), a priority will be assigned, based on AAC's assessment of the environmental risk posed by the aspect;
- an objective and target(s) will be developed detailing what needs to be achieved;

- a management plan will be developed showing how objectives and targets will be achieved, who is responsible for ensuring the necessary actions are taken, and the timing of that action; and
- the achievement of the management plan actions will be monitored, and AAC personnel advised of this.

Where the issues relate to tenant activities, AAC (with the AEO as appropriate) will liaise with the tenant to ensure that they take all necessary action to bring their operations and/or works into conformity with legislation, standards, and guidelines.

15.8 ENVIRONMENTAL MANAGEMENT PROCEDURES

Environmental Management Procedures (EMPs) have been prepared by AAC to manage the environmental effects of operations and works on the airport.

The EMPs identify a range of activities likely to take place at Archerfield Airport, the aspects of the environment that might be affected by these activities, and the potential impacts of these activities. Objectives and targets are also described.

15.8.1 Procedures

The EMPs currently include the following procedures:

- Procedure AA1-*Environmental assessment of new tenancy or lease renewal*;
- Procedure AA2-*Communication and consultation*;
- Procedure AA3-*Emergency preparedness and response*;
- Procedure AA4-*Minor spill response*;
- Procedure AA5-*Environmental awareness and training*;
- Procedure AA6-*Tenant environmental reviews*;
- Procedure AA7-*End of lease tenant environmental review*;
- Procedure AA8-*Assessment of environmental effects of new works*; and
- Procedure AA9 -*Aircraft washdown bay use*.

15.8.2 Forms

The EMPs include the following standard forms:

- ENV-01 *Tenant Information Form*;
- ENV-02 *Environmental awareness and training record*;
- ENV-03-*Environmental complain*t;
- ENV-04-*Environmental incident report*;

- ENV-05-*Review of environmental non conformance*; and
- ENV-06-*Environmental management checklist for new works*.

15.8.3 Review

The procedures and forms in the EMPs are subject to ongoing review and may change over the life of the AES.

15.8.4 Information for tenants

On request, relevant parts of the EMPs will be provided to airport tenants carrying out similar activities to assist them with environmental compliance.

The AAC EMPs provide a starting point for specific EMPs to be developed by tenants for their construction or operational activities. AAC will encourage tenants to work with AAC and the AEO to formulate EMPs to meet their environmental management obligations.

15.9 ENVIRONMENTAL TRAINING

15.9.1 AAC

Existing AAC personnel

AAC has in place an internal communication system that provides frequent forums for disseminating relevant information about environmental management issues and responsibilities. This comprises:

- weekly management meetings attended by the Airport General Manager, Airport Operations and Technical Officer, Airport Compliance Officer and Airport Operations Manager; and
- monthly staff meetings (involving AAC administration, operations and management personnel).

The training of AAC personnel focuses on improving awareness of responsibilities and liabilities under the AES; relevant State, and Federal environmental legislation; regulations and guidelines.

Training also assists personnel to familiarise themselves with the company policy, the management system, current environmental issues, and the environmental risks on the site.

AAC personnel will also be supported with environmental training that is necessary to carry out their current or emerging role and responsibilities at the airport.

The training needs will be identified by AAC management and staff:

- during project scoping and pre planning;

- in anticipation of new requirements (such as changes in standards or practices, or introduction of new systems or technology);
- in response to needs identified during staff and management reviews of current operations and individual performance; and/or
- as a result of management reviews of the airport environmental management system, or components including the EMPs;

and where the training requirement is confirmed by AAC management, an implementation plan will be developed by AAC to ensure that the training is provided in a timely way by people who are appropriately qualified and experienced (either in house, or by external specialists or organisations).

New AAC personnel

All new AAC personnel are provided with an overview of the environmental issues relating to the airport; AAC's environmental policy, strategies, procedures and current management plans (including the AAHMP); and their role and responsibility in addressing those issues and requirements as part of their induction. Refresher awareness training is provided for all staff on an annual basis.

Contractors

The Airport EMPs set out procedures for ensuring that all potential effects of new operations or works are considered by AAC prior to commencement. Where required, Environmental Management Plans will be prepared and form part of the specification for the works (or management of the operation).

Contractors carrying out environmentally sensitive activities on behalf of AAC will be briefed on the relevant provisions of the AES and any supporting management plans (including the AAHMP) for integration into the management of their activities. They will be required to demonstrate that they have appropriate skills, experience and management systems to successfully address relevant environment protection requirements.

Contractors will need to have in place appropriate environmental management procedures, and personnel will be required to undergo relevant training.

The specific requirements will be highlighted in the project specification. All contractors must complete the Contractors Induction which includes the environmental management requirements.

15.9.2 Tenants

Tenants and their employees also need to have an understanding of the 2023 AES, and the environmental management plans and procedures that apply to their activities on the airport.

AAC will provide all tenants with access to the AES and will require that all tenants:

- provide their staff and contractors with awareness training of the AES, the requirements of any Environmental Management Plan(s) that apply to their works or operations/activities on the airport and any other training required to fulfil their obligations under their lease; and
- provide further training on specific aspects, these being principally determined through the environmental reviews AAC undertakes at each tenancy.

AAC will as part of the tenant reviews:

- seek confirmation of training that has been completed by the tenant;
- confirm training that is planned; and
- identify any environmental training requirements to be met by tenants, in order to adequately address their environmental management obligations under their lease.

Where the review identifies the need for additional training, AAC will confirm the requirements with the tenant, and follow up on progress in subsequent reviews.

15.10 EMERGENCY PREPAREDNESS

Archerfield Airport has developed *Airport Emergency Procedures* through a committee that includes the Police, Fire Brigade and Ambulance Services.

Emergency procedures are currently in place to deal with incidents which could impact on the environment, such as spills. AAC ensures that its personnel are familiar with these procedures and the location of emergency equipment.

Procedure AA3-*Emergency preparedness and response* in the EMPs details the methodology to be followed.

The need for tenants to maintain emergency equipment on their sites, develop emergency procedures, and ensure that staff are aware of the proper procedures will be identified during site environmental reviews.

15.11 INCIDENTS

AAC will manage incidents on the airport in accordance with Procedure AA3-*Emergency preparedness and response,* in the EMPs.

If an environmental incident occurs the details will be recorded on Form ENV-04 *Environmental incident report* in the EMPs.

In accordance with internal reporting procedures in the EMPs, and the airport emergency procedures, the AEO will be promptly notified and kept informed on progress with any investigation and corrective action.

The AEO will also be advised if routine monitoring indicates an excessive discharge or level of pollutant above the permitted limit.

If the incident has the potential to cause off site effects, the State Department of Environment, Science and Innovation (DESI) and BCC will also be advised.

15.11.1 Incident reporting

Any major environmental incidents which occur on the site, such as chemical spills, will be investigated by AAC and reported to the AEO.

Depending on the nature of the incident, DESI may be informed of the incident, and may also be involved in consequential management measures.

This information will also be reported to DITRDCA in the annual report.

15.12 MANAGEMENT OF NEW FACILITIES

15.12.1 Application requirements

AAC will require new tenants or proponents of new aviation or non-aviation facilities or activities to apply for approvals as provided for in the *Airports Act, 1996*.

In addition to the requirements of the Airport Building Controller, the application for approval will need to detail, as appropriate:

- the activities and operations proposed, in accordance with the Archerfield Airport EMPs;
- any chemicals to be used or stored on the site including type and maximum quantities;
- evidence that the proposal meets any applicable legislative requirements and guidelines for the construction and operation of the activity or site; and
- evidence that the proposal will meet any applicable workplace health and safety, storage and placarding requirements.

Procedures for this and relevant forms are set out in the Airport EMPs.

These include:

- ENV-01 *Tenant information form*; and
- ENV-06 *Environmental management checklist for new works*.

The information provided with applications will assist AAC and the tenant/proponent to identify all potential environmental issues or impacts, and

to also clarify applicable legislative requirements and best practice management guidelines that will be applied. If required, the AEO will be provided with this information.

15.12.2 Assessment

From an environmental perspective, the assessment of new works will consider the implications of the proposal for:

- airside operations;
- existing land uses on and adjacent to the airport, including through the emission of noise, dust or odour;
- existing infrastructure and utility services, and any connections proposed during and following construction;
- efficient use of water and electricity;
- access to, from and within the airport;
- significant native flora and fauna;
- heritage values (pre and post contact);
- potential risk of soil or air pollution;
- noise impacts;
- groundwater, including potential changes to groundwater levels on or off airport, and/or water quality;
- surface water, including potential changes to peak volumes entering existing drainage lines, diversion of existing stormwater flows and/or impacts on water quality;
- containment of asbestos, where works relate to buildings or plant listed in the airport asbestos register;
- the potential for the works to result in the introduction or spreading of Fire Ants; and
- the appearance of the site and the airport.

If, on reviewing the proposal potential environmental impacts are identified, AAC will work with the proponent to identify how impacts can be mitigated. The preparation of a Site Environmental Management Plan for the construction and/or operational phases may also be required.

15.12.3 Consultation

All new proposals for the site will be reviewed by AAC against the AES, the Master Plan, and other relevant policies, guidelines or standards. Where the *Airports Act 1996* requires consultation with the wider community, AAC will facilitate this.

The AEO will be involved in assessing and advising on the environmental aspects of any major new developments on the airport site, including any Environmental Management Plan for the construction or operational phases.

If in the opinion of AAC, the development could result in a significant off-site impact, AAC will identify and consult with relevant stakeholders including BCC, and possibly State agencies and/or the community and their comments taken into consideration.

Information concerning new proposals will be provided to the AEO, in accordance with the Airport EMPs.

All comments received will be reviewed and considered by AAC before deciding on whether the proposal should proceed, and if relevant, under what conditions.

Any significant changes to airport operations will be reviewed in accordance with prevailing DITRDCA's environmental requirements for new airport development.

Where the *Airports Act 1996* requires consultation with the community (such as in the case of a Major Development Plan), AAC will undertake an appropriate consultative process. Comments received by external parties will be taken into account by AAC when deciding whether the proposal should proceed.

15.12.4 Leasing conditions

For all new leases, conditions will be included that ensure that facilities are constructed and operated in accordance with the AES and relevant environmental requirements.

Following construction of the facility, AAC will inspect the premises and verify compliance with any environmental requirements stipulated in the development approval.

Prior to lease expiry, termination, transfer or change of use AAC will, where there is reason to suspect soil contamination, ensure the sublessee, licensee or occupier, investigates the site pursuant to the requirements of the *Airport (Environment Protection) Regulations* in particular Part 6.07.

AAC undertakes prelease or entry condition reports and exit condition reports on tenancies serving as benchmark reports to ascertain asset, site and environment conditions before and at the expiry or transfer of a lease.

15.13 NEW OPERATIONS AND WORKS

New operations will also be reviewed prior to and following their establishment, to ensure operations are conducted in a proper fashion and do not result in a breach of any legal requirements and comply with the requirements of this Strategy.

The EMPs include:

- *Procedure AA8-Assessment of environmental effects of new works*, and
- *Form ENV-06 Environmental management checklist for new works*.

These set out AAC's requirements for management of new operations or works by AAC.

15.14 NON-CONFORMANCES

15.14.1 AAC's role

In administering the Archerfield Airport environmental management system for AAC operations or works, AAC is responsible for detecting non-conformances, developing appropriate corrective and preventative actions, and ensuring that such incidents do not recur.

The following types of non-conformances can occur on the site:

- breach of an applicable Act or Regulation;
- failure to follow a formal procedure;
- non-achievement of a formal target; or
- an environmental incident.

15.14.2 Actions by AAC

AAC seeks to achieve continuous improvement in the management of the airport environment.

Typically, the results of a non-conformance investigation may result in one or more of the following actions:

- amendment of the *Airport Environment Protection Action Plan*;
- amendment of the relevant Environmental Management Plan;
- amendment of an existing environmental management procedure;
- development of a new procedure;
- additional training and instruction;
- new capital works; and/or
- involvement of the AEO or other relevant government authorities.

AAC activities

In the instance of a non-conformance relating to AAC operations or works, AAC is responsible for carrying out the following actions:

- recording details of the non-conformance using the form ENV-05 *Review of environmental non-conformance*;
- investigating and identifying the reason for the non-conformance;
- developing an appropriate corrective and preventative action to avoid future non-conformance;
- ensuring the corrective and preventative actions are implemented in accordance with agreed EMPs or other relevant guidelines; and
- initiating incident reporting procedures.

Tenant activities

Management of environmental aspects of tenant activities, including protecting the airport environment from pollution or contamination, is addressed by AAC implementing the established system of:

- assessing tenant activities prior to commencement;
- determining the level of risk of their activities;
- applying conditions of approval (including appropriate management requirements for construction and operation); and monitoring, reporting and review of compliance;
- undertaking routine annual environmental inspections of high- and mid-risk tenants, to confirm compliance with relevant requirements and identify any issues or non-conformances;
- undertaking follow-ups to address any non-conformances and provide recommendations; and
- addressing any other issues with tenant activities brought to AACs attention through AAC continuous surveillance of the airport, or those that arise by other means including complaints or reports; by inspections, identifying corrective action, and undertaking follow up with tenants.

Incidents

Following an incident, the findings of the investigation and development of the corrective and preventative actions will be provided to the person/s involved in the non-conformance and the person/s carrying out the necessary preventative and corrective actions.

15.15 COMMUNICATION

Successful management of the airport environment requires appropriate and workable communication on environmental issues, management measures, and achievement of environmental objectives and commitments.

This communication includes:

- communication within the AAC organisation;
- communication with airport tenants;
- communication with local, state and Federal government via the Planning Coordination Forum (PCF) meetings which occur three times a year;
- communication with other interested parties external to the airport, such as the community and regulators; and
- ongoing liaison with other airports.

Communication procedures are set out in Procedure AA2-*Communication and consultation* in the airport EMPs.

15.15.1 Information and training for AAC personnel

AAC will ensure that its personnel are informed about existing and emerging environmental issues by:

- conducting environmental awareness training in accordance with its Environmental Management Procedures;
- making available to AAC operational personnel the results of annual environment reports, relevant environmental reviews and any management plans; and
- involving relevant personnel in the review of existing environmental management plans and procedures, and the formulation of new procedures.

15.15.2 Communication with tenants and operators

Airport tenants and operators will be kept informed about new and emerging environmental issues and requirements via a variety of methods, including:

- newsletters;
- discussions during the cyclical tenancy reviews;
- discussions at the time of applications being made for new works, or lease renewal;
- information provided on the Airport web site; and
- email.

15.15.3 Airport Environment Management Forum

AAC meets with the AEO and the ABC on a quarterly basis, or at other times as required for individual projects.

The management forum:

- disseminates information about environmental aspects of new proposals to relevant stakeholders, and proposed environment management plans or other measures;
- discusses current environmental issues and management practices, and their application to Archerfield Airport;
- considers and makes recommendations to AAC on future amendments to the Airport Environment Strategy and Airport Master Plan;
- assesses and makes recommendations on the EMPs;
- recommends training and awareness programs; and
- makes recommendations to AAC on preventative initiatives that could be implemented.

AAC currently provides a monthly report for the ABC and AEO on AAC environmental and building related activities.

15.15.4 Communication with government departments and regulatory agencies

AAC communicates regularly with DITRDCA, the AEO, BCC, and State and Federal government. This includes liaison with stakeholders on issues arising from, or potentially impacting on the operations at the airport.

Procedures for this communication and consultation are set out in Procedure AA2-*Communication and consultation* in the airport EMPs.

15.16 COMPLAINTS

Complaints from the community or other parties (except the regulatory bodies) are recorded in the AAC *Environmental and Complaints Register*.

Any environmental complaints received concerning an operation on the site will be recorded on Form ENV-03 *Environmental complaint* and dealt with promptly. The complaint will be investigated and appropriate action taken to resolve any issues identified.

The AEO will be advised of complaints as appropriate.

A summary of environmental complaints received and actions taken will be reported to DITRDCA on an annual basis.

Chapter 16 Environmental Conditions & Actions

Archerfield AIRPORT

16.1 OVERVIEW

Consistent with the *Airports Act* and AAC's *Environmental Management Procedures*, the airport environment is described in the following categories:

- heritage;
- flora and fauna;
- noise;
- emissions to air and ozone depleting substances;
- surface water;
- groundwater;
- soil contamination;
- hazardous materials and waste management; and
- use of natural resources and energy.

The following sections of the AES provide, for each aspect of the airport environment:

- objective(s) for environmental management;
- an overview of existing conditions;
- identification of potential impacts of on-airport activities or developments;
- proposed measures to manage those impacts;
- a summary of achievements for the term 1998-2022; and
- a summary of targets for actions for the period 2023-2031.

Actions for the planning period for the 2023 AES are summarised in the *Airport Environment Protection Action Plan*, in Appendix D.

16.2 HERITAGE

16.2.1 Objective

To identify and appropriately manage cultural heritage and built heritage values on the airport

16.2.2 Existing conditions

In 2021 AAC completed the *Archerfield Airport Heritage Management Plan* (AAHMP) (Australian Heritage Specialists, 2021), replacing the earlier *Cultural Heritage Assessment and Management Plan: Archerfield Airport, Brisbane* (Bonhomme Craib and Associates, 2001).

The AAHMP addresses both Aboriginal cultural heritage and built heritage.

Aboriginal cultural heritage

Prior to the arrival of Europeans in Australia, Aboriginal people inhabited the entirety of mainland Australia and associated islands, and their beliefs held that they had occupied this land since the beginning of time. Archaeological evidence shows that Aboriginal people have inhabited south-east Queensland for at least 20,000 years; however, it is expected that their occupation extends earlier than this date.

The airport is located in the traditional lands of people who spoke the Yuggera language (also known as Yagara or Jagera), which includes the Turrbal speakers. The Yagara language was spoken along most of the Brisbane River from the foot of the ranges to Moreton Bay, encompassing the "Sandy country" (Yerongpan) between Brisbane and Ipswich, which included the Brisbane River from the Cleveland district inland to the Dividing Range about Gatton, north to near Esk, at Ipswich, and as far afield as Cunningham's Gap in the Fassifern District and Murphy's Creek at the head of the Lockyer Creek.

It is possible the Turrbal name was also used for an alliance of Yagara speakers including the Turrbal and others south of the river as far as the Logan River. The word tarau in the Yagara language refers particularly to loose stones, and the name Taraubul is evidently derived from the geological nature of the Brisbane area, the formation of which is almost entirely of brittle schist.

At the time of convict settlement in the Moreton Bay region, it was estimated that some tens of thousands of Aboriginal peoples lived near what is now known as the Brisbane River, using their established pathways to attend gatherings and visit ceremonial sites. Huge gatherings often took place on neutral territory, acknowledged by all clans as meeting areas.

It is believed what was known as the Coorpooroo Clan (residing on the south bank of the Brisbane River), the Yerongpan Clan (residing along Oxley Creek in the vicinity of Brown's Plains, along the Mount Lindsay Highway), and the Chepara Clan (residing in the Eight Mile Plains area).

Although the Oxley Creek area was recorded as the traditional lands of the Yerongpan Clan, ethnographic records do not elaborate on whether their boundary extended north as far as the airport.

The airport site has been highly disturbed since European occupation of the area as a result of land clearance, stock grazing, and establishment of the airport in the late 1920s to 1930s, and ongoing development of the airport and surrounding land.

The first Europeans arrived in the Acacia Ridge area in the 1820s but the area remained mostly rural well into the 20th Century.

The airport site has been highly disturbed since European occupation of the area as a result of land clearance, stock grazing, establishment of the airport in the 1930s; and subsequent undertaking of earthworks, building activity, construction and maintenance of aviation and utility services infrastructure and other activities.

The previous HMP (Bonhomme Craib and Associates, 2001) undertook a Cultural Heritage Assessment for Aboriginal Cultural Heritage, which included searching relevant literature and registers, and also included consultation with Aboriginal groups, Native Title claimants, and other Indigenous interest groups. An archaeological field survey was also undertaken which informed the recommendations and management measures of the previous HMP.

From an Aboriginal Cultural Heritage perspective, the AAHMP findings are consistent with the earlier HMP. Neither study located any sites or features of cultural heritage significance, and both found that the majority of the airport land has no potential for in-situ Aboriginal Cultural Heritage.

Consistent with the 2001 HMP, an area with Low Aboriginal Cultural Heritage potential was identified along Oxley Creek to the south-west corner.

It is noted that parts of this area have been subject to significant ground disturbance, including from extensive earthworks for the construction of the stormwater detention basin and drains in the vicinity of Oxley Creek, and these portions do not have potential for in-situ archaeology to exist.

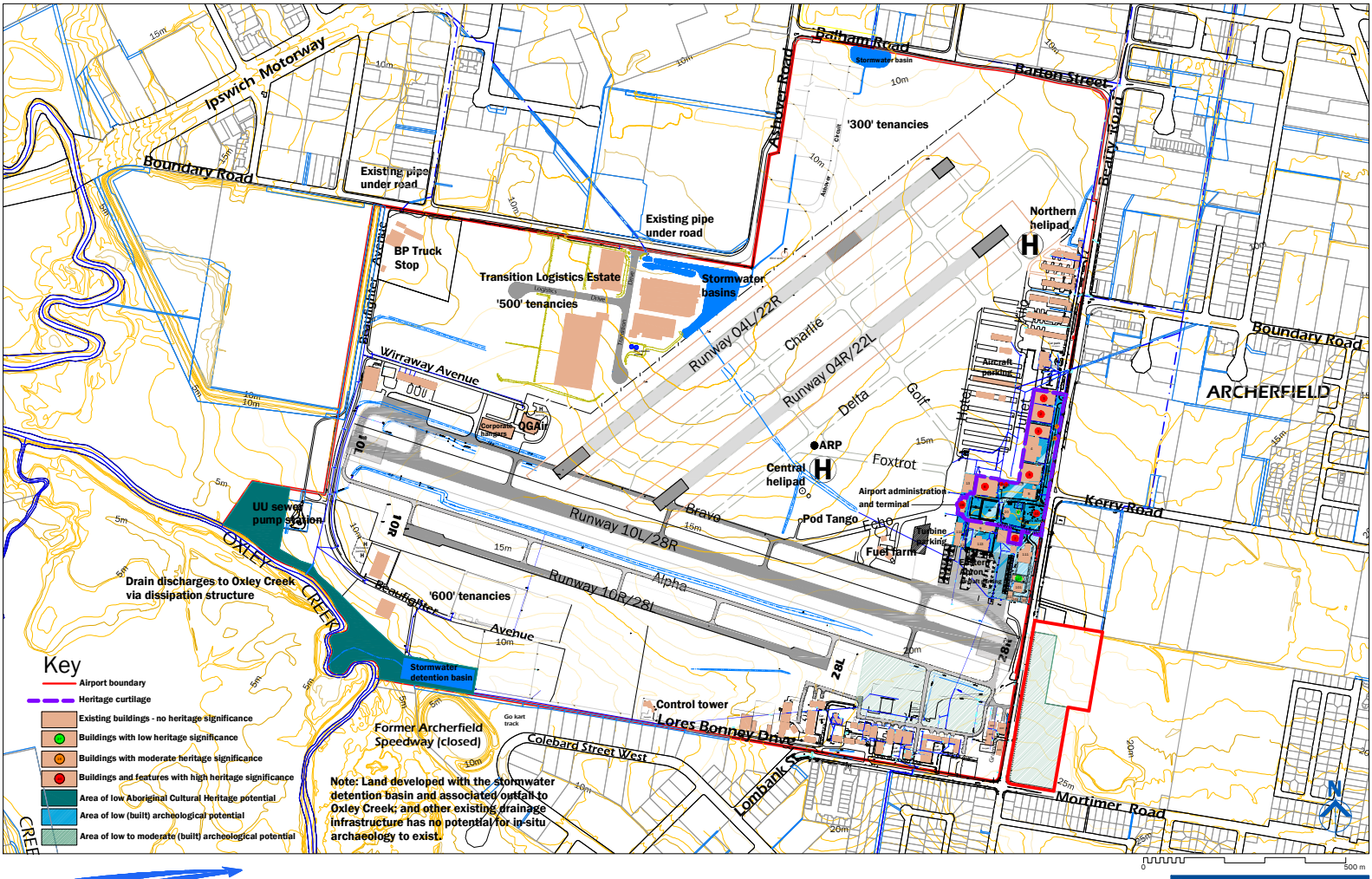
The 2021 AAHMP includes an *Aboriginal Cultural Heritage Archaeological Potential Plan*, and this has been incorporated into Figure 28 *Heritage Management Plan*. The airport land adjacent to Oxley Creek is designated in the Master Plan as a conservation area.

Built heritage

The airport developed in five historical phases, being *Pastoral* (1850-1928); *Development of air transport* (1929 to 1938); *World War II* (1939 to 1946); *Post World War Two* (1947-1997); and *Archerfield Airport Corporation* (1998 to present).

The airport site was originally purchased in 1855 by Thomas Grenier, publican of the Brisbane Hotel in Russell Street, South Brisbane. The land was lightly timbered alluvial soil, and some of the best grazing land in the district.

The land was subdivided into three family farms in 1865. Grenier's son, Thomas, and his wife Sarah, lived on one of the farms. Franklin Grenier occupied the farm which fronted onto Mortimer and Beatty Roads, and William Grenier occupied the farm called 'Stoneleigh' which had a frontage onto Oxley Creek. Franklin's land was the site upon which Archerfield Airport would later be established.



Archerfield AIRPORT

Archerfield Airport Master Plan 2023-2043

Figure 28 **Heritage Management Plan**

PlannedFX Planning Environment Strategy Design

Thomas Grenier died in 1877 and was buried in God's Acre cemetery. The farms were sold to the Beatty family in the late 1890s and early 1900s.

God's Acre Cemetery was later passed from family trustees and then to Yeerongpilly Shire Council in 1924. In 1925 Yeerongpilly Shire was amalgamated into the Greater Brisbane City Council.

In 1927 Qantas Airways test landed a DH-61 on Franklin's Farm which was located at the western side of the airport. In 1928, a Civic Survey was undertaken which recommended the area be zoned for noxious trade. Recommendations from this survey were implemented in the following year, and the area was renamed to Archerfield by Brisbane City Council to distinguish it from the surrounding residential and farming districts.

The Government initially acquired about 121 hectares (300 acres) of land in 1929. Two gravel air strips 1500 metres long were built and the airfield started operations. More land was purchased in 1930, 1936, 1942 and finally the cemetery (God's Acre) in 1946.

By the early twentieth century, the farms in the surrounding district were used for grazing, dairying, poultry, and egg production.

The name 'Archerfield' is believed to have come from a pastoral station and homestead just south of Darra, around Blunder Creek, which was owned by Michael Durack in 1881.

In the 1930s Qantas moved their operations from Eagle Farm to Archerfield after the first hangars were erected at Archerfield. Australian National Airways (ANA) and Trans Australia Airlines (TAA) both used Archerfield during the 1930s. The Queensland Aero Club, established in 1919, moved from Eagle Farm to Archerfield in 1931.

The Airport Terminal and Administration building (28) was built in 1941 when Archerfield was the main airport in Brisbane. In the Second World War the RAAF constructed infrastructure at Archerfield to facilitate the use of the airport for military purposes. This included the establishment of a RAAF camp (Camp Archerfield) in the Mortimer precinct.

The United States Fifth Air Force and the Netherlands East Indies Military Air Force were also stationed at Archerfield. To facilitate the needs of the wartime era, the airport boundaries were extended to include land to the west and north. This also resulted in the acquisition of neighbouring land and the closure of the section of Boundary Road which ran previously between Beatty Road and Ashover Road.

American B-17 Flying Fortresses, Kittyhawks, Dakotas and Dutch Mitchell bombers were at Archerfield during that phase. Large hangars were built on both sides of Beatty Road. There are examples of those remaining today along Kerry Road (on the eastern side of Beatty Road, off airport).

The Mustang and Vampire aircraft of the RAAF 23 Squadron were based at Archerfield until September 1955.

The RAAF had left Archerfield by the mid-1950s, and by then most of the remaining structures had been dismantled. By the mid-1970s, the Camp Archerfield buildings were removed or dismantled.

Once Eagle Farm became established as the main civilian passenger centre and the RAAF moved to Amberley, Archerfield became a thriving light aircraft centre.

Between the 1960s and 1970s, a number of upgrades and improvements were made to the runways, including surface regrading and gravelling of sections. By the 1970s the runway format comprised of three parallel landing strips (left, centre, right) for each of the three predominant wind directions.

Of the nine runways, only one (on the 10/28 alignment) was sealed. By the early 1980s, the runway system had been reduced to two pairs of parallel runways on alignment of 10/28 and 04/22.

The current control tower was constructed in 1973, replacing a facility on the roof level of the Airport Administration and Terminal building.

The AAHMP identifies a number of buildings and items on airport that are of historical interest and assist with interpretation of the past use and development of Archerfield.

Archerfield Airport was Brisbane's major airport from 1930 to 1947, and has been Brisbane's main general aviation airport since 1947. It played a significant role in the development of Australia's fledgling domestic and international airmail networks, and in controlling air traffic and operations during World War Two.

Significance

The AAHMP provides a hierarchy of significance for the buildings and other elements remaining at Archerfield from these historical phases.

It attributes an 'exceptional' grading to the continued operation of the airport, on the basis that:

> *Archerfield Airport is one of the oldest airports in Queensland that has maintained operational use since its development in the late-1920s. The continued use of Archerfield as an operating airport ensures that the historic use of the airport is maintained and enjoyed by current and future generations. The use of Archerfield Airport as, first and foremost, an operational airport, is therefore of exceptional value.* (AHS 2021 page 61)

and concludes that from a heritage perspective, the continued operation of the airport takes precedence over other considerations when determining the management of heritage values.

The AAHMP has found that the significant historical heritage values remaining at Archerfield Airport are confined to that part of the Beatty precinct which

contains the Airport Administration and Terminal building, God's Acre Cemetery, and buildings associated with historical phases 1-3 of the airport.

These buildings and features fall within an area described as the *Heritage curtilage* (Figure 29).

The buildings and elements of 'high' significance are:

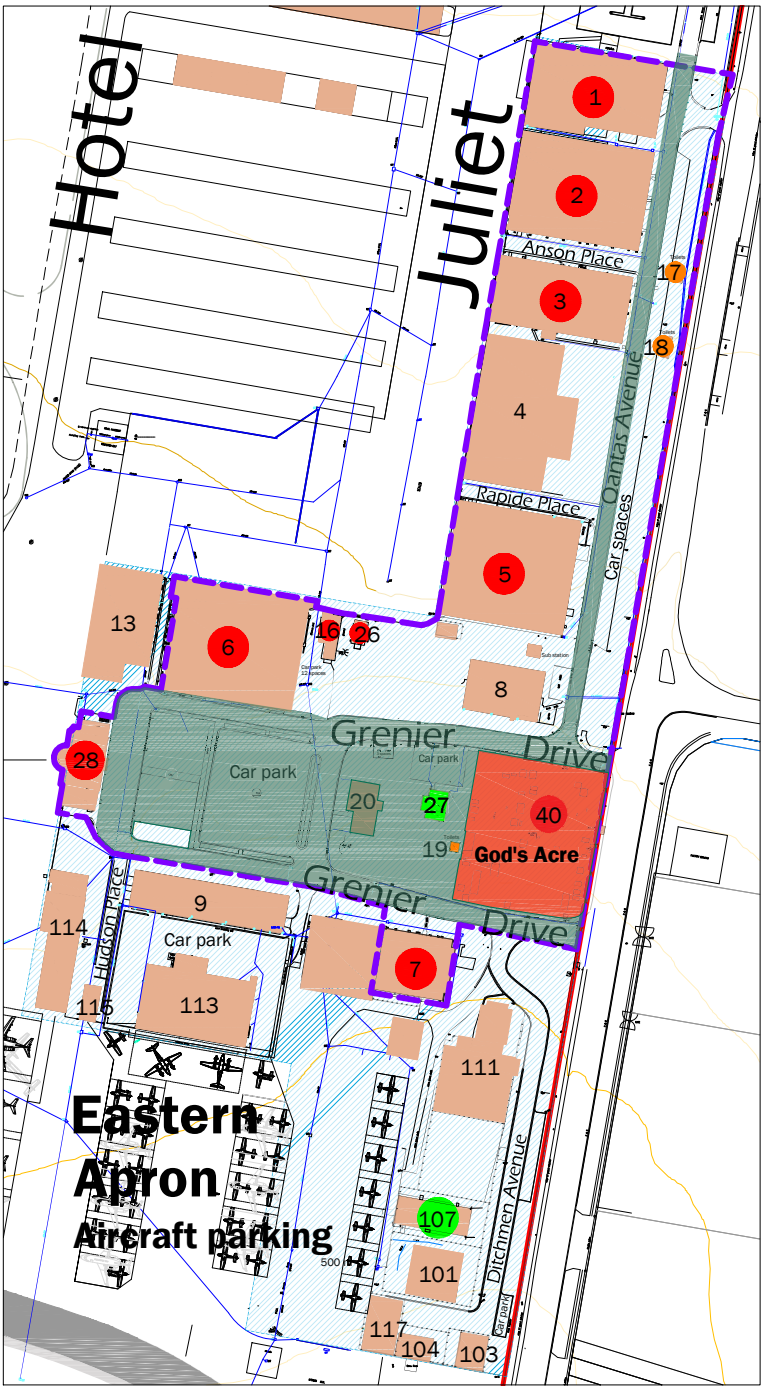
- Hangars 1-3
- Hangars 5 and 6;
- the original, eastern part of Hangar 7;
- Shell kiosk (building 16);
- Powerhouse (building 26)
- Airport Administration and Terminal Building (building 28); and
- God's Acre Cemetery (site 40).

The AAHMP has also identified the following buildings and features from historical phases 2-4, but concluded that they have either 'low' or 'moderate' significance:

- toilets (buildings 17, 18 and 19) - moderate significance (not a key element from a heritage perspective and have undergone some alteration and change over time (i.e., new fixtures, and fittings), however their original form of the structures remains interpretable and original/early timber framing remains intact);
- Building 27 (now used as a café) - low significance (due its overall poor integrity, from substantial internal and external alteration over the years and relocation a number of times);
- Building 107 - low significance (poor integrity, constructed or relocated to the site in the late 1950s); and
- auxiliary elements within the Beatty precinct, including Qantas Avenue, Grenier Drive, Pitt Street, and the forecourts / green spaces adjoining Building 28 and God's Acre Cemetery - low significance (over the years the location of these elements, the road and path alignments, provision of parking spaces and driveways, and materials and finishes have been altered and replaced and have poor integrity.

The AAHMP provides more information about each development phase; a series of aerial photographs that show the development of the airport over the years; and site cards (with photographs, plans and other explanatory information) for each of the buildings and God's Acre Cemetery.

The heritage buildings and features are shown in Figure 4 *Existing airport layout* and in Figures 21 *Beatty Precinct Structure Plan*, 28 *Heritage Management Plan* and 29 *Heritage curtilage*.



High built heritage significance
Hangar 1
Hangar 2
Hangar 3
Hangar 5
Hangar 6
Eastern part of Building 7
Building 16
Building 26
Building 28
God's Acre Cemetery (40)

Moderate built heritage significance
Building 17 - Toilet
Building 18 - Toilet
Building 19 - Toilet

Low built heritage sigificance
Building 27 - Air Archer cafe
Building 107

No built heritage significance
All other buildings and features

Key

- **Heritage curtilage**
- **Existing buildings - no heritage significance**
- **Area with low built heritage significance**
- **Buildings with low built heritage significance** (27)
- **Buildings with moderate built heritage significance** (19)
- **Buildings and features with high heritage significance** (40)
- **Area with low (built) archaeological potential**

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Hangar 1

Hangar 1 is the oldest building on the airport. It was initially constructed at Eagle Farm in 1927 and relocated to Archerfield in 1931.

Hangar 1 consists of three sections: the 1927 hangar and central section extension, the adjoining 1938 hangar and extension to the north (now administration area), and the skillion extension to the south (1943 extended area).

The central part of the hangar consists of the original steel trussed structure fabricated in 1927 (and relocated to Archerfield in 1931), which was extended in 1943 to the east with a timber-trussed saw-tooth roof with skylights on the south side. The earlier (western) portion of the hangar now has painted galvanised steel external wall and roof cladding, with clerestory glazing to the upper parts of the western and southern elevations, and an awning spanning across the western elevation.

Vented windows were provided in the gables of the original hangar, but only the eastern window remains intact. The hangar doors are of timber construction with steel bracing straps. A timber framed wall and sliding door constitutes the eastern wall of the extension. The north and south internal walls are lined with contemporary timber battening.

The adjoining administrative centre to the north of the original building was built in 1938 as a second hangar, and later extended to the east in 1943. The original/early extension (at the western end) consists of a rectangular, gable roof structure with louvered window on the western gable end, externally clad in corrugated iron sheeting.

The hangar has contemporary aluminium framed doors and windows, and louvered clerestory and transom windows. The later extension (at the eastern end) consists of a rectangular, skillion roof structure with exposed steel trusses, externally clad with panelled galvanised steel sheeting, with contemporary aluminium framed doors and windows, and louvered clerestory and transom windows.

Hangar 1 relates to phases 2 and 3 of the airport, and has been assessed as having a 'good' condition score, 'high' heritage value, and 'high' integrity.

Hangar 2

Hangar 2 was constructed in 1930 by Queensland Air Navigation Ltd (QAN) which operated a Brisbane to Townsville service. It also was the departure point for New England Airways, the first successful airline to operate a Brisbane to Sydney route.

Hangar 2 consists of three sections: The original 1930 'coat hanger' style hangar along the western boundary, the central and eastern extension (most likely constructed in c.1941), and the later adjoining extensions to the south and north (both now used as workshops).

The original hangar has a gently curved roof with windows along the northern and southern boundary walls below the roof trusses. Two rows of skylights run parallel from the western boundary (airside) to the office/ workshop area in the eastern boundary.

Large sliding hangar doors with inset windows are located on the western boundary. The door tracks extend to the north and south beyond the side walls of the main hangar.

The 1941 extension is of similar design to that used in the 1943 extension to Hangar 1.

Hangar 2 relates to phases 2 and 3 of the airport, and has been assessed as having a 'good' condition score, 'high' heritage value, and 'high' integrity.

The roof and walls of the hangar are sheeted in painted galvanised iron sheeting. Large sliding doors have been installed on the eastern elevation facing Qantas Avenue, and there is a mix of old and new windows.

Later wooden extensions to the hangar have been constructed for use of storage, workshops, and other businesses.

The original external windows of the hangar have been removed from the southern wall and/or covered over on the northern wall by the fit-outs within these extensions.

Hangar 3

Hangar 3 consists of two sections: the 1935-36 hangar and the 1943 hangar extension to the east.

The original hangar was a 'Comet' brand steel framed structure, one of few erected at Archerfield Airport. It has a gently curved steel roof, with skylights running parallel along the centre of the roof, north to south.

The 1943 extension has a timber framed saw-tooth roofed, originally built as a workshop. The extension incorporates large timber framed box gutter structures at the base of the remaining skylight glazing. Hanging lights with metal shades are set along the base of the trusses at regular intervals. Internal rooms extend along the southern side, and part of the northern side.

The external walls have been re clad and are galvanised painted steel with timber framed windows, containing either louvered glass or safety glass. A roller door is also located on the eastern wall.

The hangar was also the first 'private' hangar at Archerfield that was not associated with a government organisation or airline.

Hangar 3 relates to phases 2 and 3 of the airport, and has been assessed as having a 'good' condition score, 'high' heritage value, and 'high' integrity.

The building has been recently refurbished, and the new contemporary internal fitout includes classrooms along the north and south sides.

Hangar 5

Hangar 5 was originally erected in 1931 for Qantas. The hangar is a significantly larger span structure than the other early hangars at Archerfield Airport.

It consists of three sections: the original 1931 'coat hanger' style building, the skillion roofed lean-to structures added to the northern and southern sides in 1934, and the c.1941 hangar extension to the east.

The hangar originally spanned 27.4 metres with 6 metre high walls along the north and south sides. Skylights run from the southern and northern walls to the middle of the roof. The roof is clad with painted galvanised steel metal. Several roller doors have been inserted into the north elevation.

The lean to extensions were added in 1934 and ran along the length of the northern and southern hangar walls. The overall width of these buildings extends to the length of the hangar door tracks, located on the western wall (airside).

Parts of these buildings were removed in 1941 when the hangar was extended. Internally the southern wing runs along the length of the 1941 hangar only. The exterior of these buildings is a painted galvanised iron metal sheeting with large, framed windows running along the entire length, and windows running above the roof line. Part of the southern wing has been refitted as an office and passenger waiting room with dropped ceilings and contemporary fittings. The northern wing houses a business.

Hangar 5 relates to phases 2 and 3 of the airport, and has been assessed as having a 'good' condition score, 'high' heritage value, and 'high' integrity.

The hangar was refurbished in 2016. The works included a new domed roof, replacement windows, and a drain along the southern boundary.

Hangar 6

Hangar 6 was constructed in 1938-1939 for Airlines of Australia (AOA)/Australian National Airways (ANA).

It is a 'coat hanger' style with curved steel roof trusses. Two rows of large skylights run along the width of the painted galvanised steel roof from the northern boundary (airside) to the southern boundary. Modern electrical

lighting, along with aircraft maintenance equipment, has been attached to the original metal trusses.

Large, galvanised steel sliding hangar doors open to airside, and a removable section has been created to allow for high-tailed aircraft to enter the hangar.

Additional rooms are located along the southern boundary of the hangar. The storage room, located in the southwest corner of the building has retained some of the original 1938-1939 fabric including wooden floorboards, wooden trusses, and early galvanised walls. The rooms located on the southern boundary of the hangar, are elevated off the main hangar. Other 1938-1939 fabric evident within the hangar include wooden doors, with a frosted glass panel, with an associated concrete step to the hangar floor located in the south-western boundary. These, however, are not in use.

The hangar was extended on its western boundary in the late 1930s to include a terminal and passenger lounge for ANA. The hangar was also extended along its eastern boundary to accommodate additional aircraft maintenance facilities by the Department of Aircraft Production in the early-1940s.

Hangar 6 relates to phases 2 and 3 of the airport, and has been assessed as having a 'good' condition score, 'high' heritage value, and 'high' integrity.

In 2015 the building was upgraded significantly for LifeFlight, with demolition of part of the building along the west side (to enable vehicle access from Grenier Drive to airside); removal of the internal fit out, wall linings and internal walls, and the installation of new (contemporary) internal wall, wall linings and amenities.

The rooms along the southern boundary have been repainted and have low dropped ceilings. Access to the refurbished areas along the southern wall is via a modern safety ramp.

Hangar 7

Hangar 7 was constructed in 1937. It was the first to be built south of God's Acre Cemetery, and is the only hangar at Archerfield that has concrete encased stanchions.

The original section of this hangar is unlike any of the earlier timber and steel constructions on the airfield as it was made with concrete encased stanchions. The wall panels are filled with concrete, bagged and finished. The roof is framed with a curved rolled steel joist and galvanised steel sheeting.

Internal alterations of the original section of the hangar included the construction of offices in 1971. Partitioned workshops and offices are located along both the north and south sides. Additional internal changes in 1982 included a wire enclosure.

In 2000 the hangar was extended to the west to accommodate the needs of Rapair Maintenance. The 2000 extension increased the building by more than 50% of its original size.

The eastern part of Hangar 7 relates to phases 2 and 3 of the airport, and has been assessed as having a 'good' condition score, 'high' heritage value, and 'high' integrity.

While the hangar is regarded as having 'high' significance overall, a large proportion of the hangar is a relatively modern extension to the west, and there are areas of the original hangar has been substantially modified (c.2000). These modern extensions and modifications are not of heritage value.

Shell Kiosk (building 16)

The Shell Kiosk was built in 1935 to house their new Sussex refuelling wagon, enabling fuel to be delivered to parked aircraft. Prior to this dedicated 'kiosk', a Shell underground refuelling unit was located on the airside of Hangar 5. The Kiosk was extended in 1940 to allow for storage of a longer vehicle.

The building's exterior walls are constructed of rendered brick. The roof is tiled. Wooden framed sash windows are located on the eastern, western, and northern elevations. All window frames have a decorative lintel comprising of two bricks layered vertically exposing the brick stretcher only. All windowsills are constructed of exposed brick. The same lintel pattern continues below the eaves along the eastern elevation. Another brick stretcher border is at ground level and consists of one layer only.

The Shell logo is located above the wooden door at the northern end of the west elevation (airside). A modern roller door is located adjacent to this. The Shell name is located on the extended northern portion of the building along the northern and western exterior. This part of the building has a decorative parapet ensuring it stands apart from the rest of the tiled roof.

Internally the building has been refurbished. The north-western room has a white and brown coffered ceiling, with the colour scheme extending to the picture rail.

This 1940 extension to the kiosk retained the original features, including the rendered brick and red roof tiles. The same brick pattern continues below the eaves along the eastern and western elevations. The brick stretcher border at ground level, found on the 1935 kiosk extends along the western and eastern elevations. A roller door is located on the south elevation.

In 2001, AAC restored the Shell Kiosk.

The Kiosk relates to phases 2 and 3 of the airport, and has been assessed as having a 'good' condition score, 'high' heritage value, and 'high' integrity.

Toilets (buildings 17, 18 and 19)

Buildings 17, 18 and 19 are public toilets which are believed to pre-date World War Two.

Building 17 was in its current location by 1939. The building is located to the east of Hangar 2 and Hangar 3 (between Qantas Drive and Beatty Road) and has a north-south orientation. The painted brick building comprises of the main toilet block and an uncovered entrance area. The stretcher bond brick work extends around the entire exterior. The gable roof is clad with galvanised steel sheeting. These toilets are not in use.

Building 18 was in its current location by 1939. The building is located to the east of Hangar 3 (between Qantas Avenue and Beatty Road) and has a north-south orientation. The painted brick building comprises of the main toilet block and a covered entrance area on the southern wall. The two gabled rooves that cover the toilet block and entrance have timber framing and fascias, and a galvanised corrugated metal roof. These toilets are not in use.

Building 19 was in its existing location in 1937. The building is to the south of Building 27 (Air Archer Café) and west of God's Acre Cemetery. The building walls and entry screen are constructed of painted galvanised steel sheeting.

The toilet blocks relate to phase 2 of the airport, have been assessed as having a 'fair' to 'good' condition score, 'moderate' heritage value, and 'moderate' integrity.

Former power house (building 26)

The Power House was constructed in 1938 by the Civil Aviation Board to house an auxiliary generator for the airport. The generator is no longer in use.

The exterior walls are clad with asbestos-cement sheeting and weatherboard (at the base of the building), with vents installed in the weatherboard base along the east and west elevations, and smaller vents to the north and south. The building has a pitched roof with gables, and high level windows.

The internal walls and dropped ceiling are clad with asbestos-cement sheeting. The floor is painted concrete. The disused diesel generator (dated 1969) and associated equipment remain in the building.

The building relates to phase 2 of the airport, and has been assessed as having a 'poor' condition score, 'high' heritage value, and 'high' integrity.

Building 27

The building was probably constructed in the late 1930s or early 1940s and was initially utilised as the second weather office at Archerfield. During the wartime

period, the building was transformed into a canteen to serve the needs of the increased number of people on the airfield.

The building was originally located on the south side of Grenier Drive and has since been relocated - once from its original position, again post-1949 when it was restumped, raised and located closer to God's Acre Cemetery and another time in the late 1990s when it was moved slightly south to allow for additional carparking off the northern leg of Grenier Drive.

The building was originally constructed of weatherboard and cement. Sometime after 1949 the verandah and stair on the north elevation was modified. Subsequently, windows in the west and north east elevations have also been altered, and more recently a number have been replaced.

The interior of the building has been gutted and refitted and is now a contemporary café.

The building relates to phase 3 of the airport, and has been assessed as having a 'good' condition score, 'low' heritage value, and 'low' integrity.

Airport Administration and Terminal building (28)

This building dates back to the 1940s and after a period when it was in disrepair, is once again used as the administrative headquarters for the airport, and as the airport terminal. AAC owns the building.

Plans for the building were first drawn up in 1936, but construction did not commence until 1941. The terminal housed the airline companies, the Civil Aviation Department, the Flight Checking Department, the weather bureau and Airport control officials.

A control tower was previously located on the top of the building but has since been dismantled. This building housed the first meteorological, Aeradio, and air traffic control facilities in Southeast Queensland and provided necessary passenger terminal facilities for Brisbane until 1949.

In 1949 the Royal Queensland Aero Club used part of the ground floor for its offices. In the 1970s through to 1999 the parts of the building continued to be used by civil aviation administrators.

The Airport Administration functions were relocated to building 20 under the Federal Airports Corporation and building 28 was not used for airport administration for a number of years until AAC bought and restored it from 2009 – 2015.

Building 28 is a substantial, three storey structure. It is a standalone, landmark building, sited at the western end of the Grenier Drive loop, and frames the western side to Archerfield Square.

It is built to the site boundaries. It has a broad ground floor, aligned north-south, and stepped upper floors. The upper floor setbacks are more substantial on the north and south elevations.

Earlier in its history, the building had an additional level which was used as the airport control tower. This was removed when the current tower was commissioned in the Beaufighter precinct in the 1970s.

The building is of rendered brick construction, in the interwar Functionalist style of architecture (i.e., streamlined detailing, geometric form, symmetrical elevations).

The elevations of the original part of the building are symmetrical. The ground floor has been extended to the south. The design of the extension is simple, and follows the features of the original building including the brick base, rendered walls and parapet to the flat roof.

The building is constructed from brick and concrete (the majority of the walls are rendered), with metal framed windows and sections of exposed brickwork. In the west elevation (facing the taxiways and aprons), there is a prominent curved bay window, a centrally located clock and winged badges.

Exposed brickwork runs around the base of the building as a decorative feature. It forms a base to the ground floor bay windows in the west (airside) elevation, and covers the central part of the ground floor elevation and main pedestrian entry doors, facing Grenier Drive.

The building has flat roofs, with parapets at first and second floor levels, and an observation deck on the roof, secured by a metal railing and accessed via an external staircase on the north side.

Although some original window fabric has been replaced with aluminium frames, the control tower has been removed, and the building has been repainted, much of the exterior features remain largely intact.

The interior of the building however as had alteration and change on each level since the 1950s (though some original features and elements remain within, including the women's toilet facilities on the ground floor). The alterations that have occurred since the 1950s, internally and externally have low to no heritage significance.

Building 28 relates to phase 3 of the airport, and has been assessed as having a 'high' condition score, 'high' heritage value, and 'high' integrity.

God's Acre Cemetery (site 40)

God's Acre Cemetery is located on the corner of Beatty Road and Grenier Drive, at the main entry to the airport. This historic site is one of Queensland's oldest cemeteries.

The site was established by the early settler and South Brisbane Publican, Thomas Grenier on the family property after the death of Volney Grenier, their 16 year-old son. It was dedicated as a cemetery in 1859, just before Queensland became a separate state. It was established more than 160 years ago.

About 180 people including descendants of the Grenier family and other members of the local community are buried in the cemetery, with the last funeral held there in 1980.

The land was acquired by the Government in 1946. It represents an historic link to the pioneers of the district, and a valuable resource for interpreting the evolving history of the local community.

The cemetery was originally surrounded by a white picket fence, which has been replaced over the years. A hibiscus hedge was planted in 1941 replacing an earlier picket fence along the northern, western and southern boundaries and a post and top-rail fence along the Beatty Road boundary. The rest of the hedge was replanted in the 1990s.

Today the cemetery is surrounded by a white picket fence and partial hibiscus hedging. A variety of trees have grown around the site. Approximately 40 headstones have survived, and are made of marble, granite, concrete or sandstone. Some original nineteenth century cast iron and early twentieth century concrete post and steel rail grave surrounds also remain. An unidentified timber grave marker is located within the cemetery.

A small memorial arc, an interpretive sign and an obelisk with a brass plaque, with the names of everyone interred within the cemetery was erected more recently by Friends of God's Acre. Small memorial plaques have been placed close to the eastern boundary of the site.

God's Acre Cemetery relates to phase 1 of the airport, and has been assessed as having a 'good' condition score, 'high' heritage value, and 'high' integrity.

Building 107

Building 107 was established in the post war era (phase 4) by George Ditchmen, who ran a general aviation company and operated aircraft repair facilities at Archerfield in the late 1940s. Building 107 was used as a small aeronautical workshop.

It is a single storey, weatherboard clad structure that is rectangular in shape and oriented in an east to west direction.

The roof shape is predominantly a curved roof (barrel vaulted) with small skillions to each side of the curve. The roof is clad with corrugated iron.

The side elevations have large sections of casement windows and double doors which enclose the skillions. Each end wall has casement windows and double louvres on the upper wall section

The building relates to phase 4 of the airport, and has been assessed as being of low heritage value, in poor condition, with low integrity.

16.2.3 Potential impacts

The potential impacts on Aboriginal cultural heritage, and built heritage values would stem from:

- management of potential Aboriginal cultural heritage values in the area adjacent to Oxley Creek, as shown in Figure 28, *Heritage Management Plan;*
- management of any potential sub surface low to moderate (built) archaeological values in the former Camp Archerfield area in the Mortimer precinct; or in the area of low (built) archaeological potential in the Beatty precinct, as shown in Figure 28, *Heritage Management Plan*;
- demolition or inappropriate alterations to buildings or features of identified high or moderate built heritage value;
- inappropriate development of land within the *Heritage curtilage* and adjacent to buildings or features identified as having high or moderate built heritage value; or
- lack of maintenance of buildings of identified built heritage value.

16.2.4 Management

AAC will implement the findings and recommendations of the *Archerfield Airport Heritage Management Plan* (2021) (or any subsequent Heritage Management Plan approved by AAC) in any decisions relating to development of sites or features of heritage value.

AAC is sensitive to the need to retain historically significant buildings where appropriate uses can be found (including through adaptive re use) or their removal would otherwise contribute to the significant loss of past history.

AAC also recognises that a number of older buildings on the airport are no longer suited to modern aircraft and are inefficient in terms of their layouts for modern aviation related purposes.

In order to ensure Archerfield continues to attract aviation tenants of a high calibre and the airfield continues to regenerate, development options will be canvassed when approached by prospective aviation tenants.

Each development will be assessed on an individual basis, taking into account the tenant's requirements; the heritage value, condition and integrity of the building; the implications of the proposal for aspects of the building that have

been identified in the Master Plan as having heritage value; the potential for adaptive reuse (including the implications of current building and related standards); and the feasibility of refurbishment, removal or relocation. Buildings containing asbestos will be handled in accordance with the AES.

A heritage impact assessment will be undertaken for any proposal that has the potential to result in substantial change or significant impact on a building or feature of moderate or high heritage significance (as shown in the *Heritage Management Plan* in Figure 28), before deciding on whether to progress a proposal.

Subject to the findings and recommendations of the heritage impact assessment, AAC may also consult with the Commonwealth prior to either approving works by tenants of buildings of high heritage significance, or undertaking works that may impact significantly on the heritage values of those buildings or features.

Development proposals for sites within the *Heritage curtilage* (Figure 29) that do not have significant heritage values will be assessed to ensure that the proposal is sited and designed so that it does not impact significantly on any building or feature of moderate or high heritage significance.

God's Acre Cemetery

AAC will continue to support the work of Friends of God's Acre which is engaged in conservation of the historic cemetery.

Aboriginal Cultural Heritage potential

Before sub surface works or clearing are undertaken in the area adjacent to Oxley Creek, identified in the *Heritage Management Plan* (Figure 28) as being of 'low Aboriginal Cultural Heritage potential', personnel will be provided with a cultural heritage induction, to give awareness of potential values in the area, confirm the 'stop work' procedure to be implemented in the event of incidental finds of items that might hold Aboriginal Cultural Heritage significance during the project activities (as set out in the AAHMP), and resolve and implement any management actions that are required.

It is noted that parts of this area have been subject to significant ground disturbance, including disturbance caused by the construction of the main stormwater detention basin, drains and dissipation structures in the vicinity of Oxley Creek, and these portions do not have potential for in-situ archaeology to exist.

Potential historic (built) archaeological values

Before sub surface works are undertaken in an area identified in the *Heritage Management Plan* (Figure 28) as having built archaeological potential, personnel

will be provided with a heritage induction. The induction will give awareness of potential values in the area, confirm the 'stop work' procedure to be implemented in the event of incidental finds of items that might hold heritage significance during the project activities, and the actions that will be taken following stop work (as set out in the AAHMP).

16.2.5 Achievements 1998-2023

AAC has completed an updated *Archerfield Airport Heritage Management Plan* (AAHMP) (Australian Heritage Specialists, 2021), replacing the original *Cultural Heritage Assessment and Management Plan* prepared in 2001. The AAHMP findings and recommendations have informed the AES.

AAC has over the past 26 years spent more than $3.8M on heritage conservation initiatives at Archerfield. This includes purchase of the historic Administration and Terminal building (28), restoration of the former Shell Building, refurbishment of Hangars 3, 5 and 6, refurbishment of the ground, first and second levels of the Administration and Terminal building in 2009 and 2015, and repainting the exterior walls and waterproofing the external surfaces.

The upper floors of the building are now used for airport administration and offices, and the ground floor is once again used as a terminal.

In 2022 AAC established the Airport History Room in building 28. The History Room is the home to an evolving archive of records and memorabilia about the history of the airport, and interpretative materials. It is the base for preparation of interpretative displays, and a place for research to be undertaken.

AAC has supported the conservation work being undertaken by Friends of God's Acre, through donations and contribution of labour and provision of specialised equipment for maintenance works.

AAC has encouraged enjoyment and pride in the airport by opening the Administration and Terminal building and surrounds to the public on Brisbane Open House days where they can view information about the history of the airport, and memorabilia from the past.

16.2.6 Implementation targets for the 2023 AES

Apply the following protocols for assessment of proposals for buildings or features of heritage value, and decisions by AAC on action to be taken, in accordance with the findings and recommendations in the AAHMP.

Sub surface works in the area of low Aboriginal Cultural Heritage potential

Prior to undertaking sub-surface works in the area adjacent to Oxley Creek identified as an area of low Aboriginal Cultural Heritage potential (as shown in Figure 28, *Heritage Management Plan*);

- provide personnel with a heritage induction, to give awareness of potential values in the area;
- confirm the 'stop work' procedure to be implemented in the event of incidental finds of items; and
- confirm the actions that will be taken following stop work, to assess any items, carry out any additional investigations that may be required, and develop and implement any required heritage management actions.

Sub surface works in areas of low to moderate built archaeological potential

Prior to undertaking sub-surface works in the area of low built archaeological potential in the Beatty precinct; or low to moderate built archaeological potential in the Mortimer precinct (as shown in Figure 28, *Heritage Management Plan)*;

- provide project personnel with a heritage induction, to give awareness of potential values in the area;
- confirm the 'stop work' procedure to be implemented in the event of incidental finds of items; and
- confirm the actions that will be taken following stop work, to assess any items, carry out any additional investigations that may be required, and develop and implement any required heritage management actions.

Proposed development – sites of moderate or high heritage significance

Assess the heritage implications of any proposed alteration or demolition of a building or feature of moderate or high heritage significance (as shown in the *Heritage Management Plan* in Figure 28), or construction of new buildings and works on the site of buildings or features of moderate or high significance, taking into account:

- the tenant's requirements;
- the heritage value, condition and integrity of the building;
- the implications of the proposal for the aspects of the building that have been identified in the Master Plan as having heritage value;
- the potential for adaptive reuse (including the implications of current BCA requirements and related standards); and

- the feasibility of refurbishment, removal or relocation.

Undertake a heritage impact assessment for any proposal that has the potential to result in substantial change or significant impact on a building or feature of moderate or high heritage significance, as shown in the *Heritage Management Plan* (Figure 28).

Subject to the findings and recommendations of the heritage impact assessment, AAC may also consult with the Commonwealth prior to either approving works by tenants of buildings of high heritage significance, or undertaking works that may impact significantly on the heritage values of those buildings or features.

Proposals within the Heritage Curtilage

When assessing development proposals for sites within the *Heritage curtilage* (Figure 29) that do not have moderate or high heritage significance, ensure that the proposal is sited and designed so that it does not impact significantly on a building or feature of moderate or high heritage significance, as shown in the *Heritage Management Plan* (Figure 28).

God's Acre

Continue to support the conservation work by Friends of God's Acre and seek the cooperation of all levels of government and the broader community in improving the site and promoting it to the local community and visitors.

Airport history room

Maintain the Airport History Room, and facilitate access by people with an interest in the history of the airport to the resources that are held.

16.3 FLORA AND FAUNA

16.3.1 Objectives

To identify and conserve significant indigenous flora and fauna.

16.3.2 Existing conditions

History

The land that the airport occupies was cleared by early settlers and used for farming.

By 1931, with the exception of the Oxley Creek environs the area was an open grassed paddock and since then, the airport has been managed mainly as a grassed area, with extensive mowing and removal of large trees where these infringe on obstacle clearance standards.

Trees and shrubs grow along the banks and flood area of Oxley Creek, and there is planted vegetation around the built up areas of the airport.

Oxley Creek context

Oxley Creek Catchment has an area of approximately 260 square kilometres. The creek is about 50 kilometres long and flows from the Flinders Peak Region to the Brisbane River.

The airport is in the lower to middle reaches of the creek catchment, approximately 500m upstream of the confluence of the Oxley and Blunder Creeks. This part of the Oxley Creek catchment is urbanised, and the land along the creek is used for housing, industry, open space, and sand extraction.

The Creek is part of a regional open space and habitat corridor that runs through the southern part of Brisbane to the Brisbane River.

In the general locality (and upstream of) the airport there are some remnant paperbark (*Melaleuca nodosa*) wetlands which before European settlement would have covered most low-lying areas of the catchment and provided habitat for waterbirds, frogs, and fish.

Riverine or vine forest was the dominant vegetation on creek banks, and 'dry' rainforest grew on the well-drained floodplains. In poorer soil, a mixture of Eucalypt and wetland species grew.

In recent years BCC has secured the land on the south side of Oxley Creek immediately to the south of the airport (extending upstream of the confluence of Oxley and Blunder Creeks) and has designated this as an 'environmental protection area' in City Plan. This action was taken following an unsuccessful proposal to undertake sand extraction in that area.

The south western corner of the airport has a frontage of approximately 550 metres to Oxley Creek.

Along the creek banks there is riparian vegetation that contributes to the landscape and ecological values of the creek. The balance of the airport land adjacent to the creek is largely clear of vegetation. It is managed by grazing and occasionally slashing, consistent with current practices on many other properties along this part of the creek.

The area accommodates also important stormwater management works, including a major stormwater detention basin, and drainage outfalls.

With this in mind, the land has been designated as a 'creek buffer' in Figure 2 *Master Plan vision*, and zoned *ACN1 Archerfield Airport Conservation (Local)* in Figure 19 *Airport land use zoning*.

Flora and fauna significance

In May 1997 the (then) Queensland Environmental Protection Agency (Stewart 1997) was commissioned by the Airport to advise on flora and fauna values. The study included site surveys and literature reviews. It concentrated on the Oxley Creek as, due to past and current use, and the relationship of the creek to the broader regional environment, this area was assessed to have the highest probability of containing flora and/or fauna of regional or higher significance.

The study found that:

- the vegetation of the Creek and surrounding area is considerably disturbed with numerous plant and weed species and substantial clearing of native vegetation;
- a total of 45 vertebrate species are known to occur along Oxley Creek. None are vulnerable (Schedule 3) or rare (Schedule 4) species under the *Queensland Nature Conservation (Wildlife) Regulations* 1994;
- two species of migratory birds or birds in danger of extinction, Little Curlew (*Numenius minutus*) and Sharp-tailed Sandpiper (*Calidris acuminata*) are species closely related to the short grass and wetlands of the area. These migratory species are currently listed under the EPBC Act;
- a further species of international significance, the Rainbow Bee-eater (*Merops ornatus*) (an EPBC Act listed marine species) may breed in the sandy banks of the Creek;
- no mammals, frogs or reptiles were recorded along Oxley Creek during the survey; and
- no threatened or endangered species of fauna were identified.

It concluded that the creek provides essential habitat for some native fauna, but is unlikely to support populations of regional significance. Three species of local significance and three of international significance are recorded along or in close proximity to the creek.

The (then) Queensland Department of Natural Resources and Water advised in June 1999 that:

- a more comprehensive survey would probably identify frogs, reptiles or mammals in Oxley Creek;
- migratory waders *Numenius minutus* and *Calidris acuminata* (EPBC Act listed) are listed by DNR as being in danger of extinction. This occurrence is very transient as waders prefer coastal habitat. Waders are most likely to visit the creek during times of drought. This requires further investigation;

- historically there is a high possibility of the rare frog species *Litoria brevipalmata* occurring within the Oxley Creek catchment. If it occurs within the area its presence would be significant;
- the vegetation description suggests that the existing habitat is unsuitable for any scheduled species other than *Litoria brevipalmata*; and
- conservation of remnant fauna should be concentrated along Oxley Creek.

A number of matters of national environmental significance (MNES), including threatened, migratory or marine species protected under the EPBC Act have been identified as potentially occurring at or nearby Archerfield Airport.

Actions that have, or are likely to have, a significant impact on MNES, or on the environment of Commonwealth land, must be referred under the EPBC Act, and a permit may be required under the Act. This will require further investigation and assessment if there are any proposals that could include actions that might impact on species listed under the Act, or on the environment of Commonwealth land.

Pest animals

The airport has not been subject to excessive pest animal populations, with the exception of Fire Ants which were confirmed in 2001 and have been subject to a rigorous ongoing control program since then.

The airport sits within the 'eradication overlap zone' of the National Fire Ant Eradication Program (NFAEP) and has recently experienced a resurgence of Fire Ant activity across various precincts with the NFAEP resources concentrated at the eradication zones located further west of the airport.

16.3.3 Potential impacts

The main potential impacts of airport activities on flora and fauna values in Oxley Creek are:

- altered surface water flow patterns (including peak flows) entering the Creek;
- water quality decline, in particular through sedimentation; lowering of pH; changes in temperature; excess nutrient loads; and pollution by hydrocarbons or metals;
- light pollution from new or upgraded lighting;
- pollution from heavy industry and waste processing;
- weed and pest animal invasion;
- bird strike; or
- vegetation removal or other changes to habitat in proximity to the creek.

16.3.4 Management of impacts

The riparian zone of Oxley Creek is likely to provide habitat for frogs, reptiles, birds and mammals, and these values have the potential to improve over time, particularly following habitat restoration by BCC in 2014 on the land on the south side of Oxley Creek.

The impacts of any new works on airport land in the vicinity of the creek on significant flora and fauna will be considered in the assessment of the works, and where impacts are identified, mitigation measures will be incorporated into the design, and implementation and operational phases.

Appropriate management measures for the creek frontage will be addressed prior to any significant new development of land next to Oxley Creek.

In the wider city context, the Oxley Creek Transformation project by BCC seeks to improve habitat and recreational use of the Oxley Creek. The transformation project includes the progressive implementation of the *Archerfield Wetlands Precinct Plan*, which covers the section of the creek to the west of the airport, between Ipswich Motorway and Bowhill Road. The BCC priorities for this area include creation of new recreational access to and along the creek (on the opposite side to the airport); and works to better manage stormwater, and conserve and improve habitat.

AAC will continue to facilitate the Fire Ant control measures being implemented by the State government.

The use of mainly indigenous plants in landscaping works on the airport will provide some additional habitat opportunities, and reduced reliance on watering when compared with exotic species.

Bird and bat strike is a significant issue for airport safety, so measures will continue to be implemented to manage bird and bat habitat to minimise the risk of this occurring on the airport, and in the wildlife buffer zones that are shown in Figure 13, consistent with NASF Guideline C *Managing the risk of wildlife strikes in the vicinity of airports*.

These safeguarding requirements will also be considered in the forthcoming updated assessment by AAC of significant ecological values on, and in the vicinity of the airport.

16.3.5 Achievements 1998-2023

AAC has maintained the airport grounds through regular mowing, control of weeds, and progressive upgrading to landscaping.

Fire Ant control by helicopter and motorcycle broadcasting has since 2001 been undertaken by the State government and AAC. AAC conducts regular

inspections of the airport grounds, reports findings, and in conjunction with the State, implements control measures.

Extensive stormwater management works were implemented in 2003-2004 in association with developments in the Beaufighter Avenue/Mortimer Road, and Central precincts. These works replaced eroding open drains with a system of pipes, grassed swales and detention facilities.

Additional stormwater drainage works have been implemented with the construction of piped drainage under Runway 04L/22R; construction of a stormwater detention and water quality treatment complex to the north-west of this, in the Boundary precinct; and construction of stormwater quality treatment and detention infrastructure in the Ashover precinct (in the north-west part of the airport). Extensive maintenance and restoration of stormwater drains on the southern and eastern side of the airport was also carried out in 2015/2016.

The new drainage works cater for existing and planned airport developments, and improve the management of water quality and the peak quantity of water discharged to Oxley Creek and to the drainage system north of the airport.

New landscaping work was carried out along Grenier Drive and Ditchmen Avenue in 2012. This included replacing existing inappropriate vegetation with Tuckeroos. The areas around Hangars 1, 2, 3, 4, 5, 6 and 13, and Buildings 8 and 9 have also been landscaped with appropriate plants. Transition Estate was planted with new street trees and garden beds along Transition Drive and Logistics Drive in 2021. The newly landscaped areas have successfully improved the presentation of these areas.

16.3.6 Implementation targets for the 2023 AES

The management of impacts on any significant flora and fauna will be considered in the assessment of new works.

Prior to development of airport land adjacent to Oxley Creek that is not currently intensively managed through slashing or grazing, appropriate flora and fauna investigations will be undertaken to confirm the existence of any significant species or habitat. If significant values are identified, consideration will be given to mitigating impacts.

AAC will also within the initial two years of the AES:

- undertake an assessment of flora and fauna values to confirm significant values that could occur at Archerfield Airport or potentially could be impacted by airport developments, and any conservation or management requirements that apply to identified values, and
- if MNES are confirmed by the updated assessment, AAC will consider the potential impact to protected matters of future development, construction plans and airport operations (including consideration of MNES and MNES

habitat requirements and potential dispersal habitat beyond the Archerfield Airport Conservation (Local) Zone, adjacent to Oxley Creek).

AAC will ensure that potential impacts on confirmed MNES are addressed in the planning, design, construction, and operation of new developments, and where any referral or permit is required under the EPBC Act, this process is undertaken.

AAC will consider also the potential impacts on MNES arising from light emissions from planned developments, having regard to the *National Light Pollution Guidelines for Wildlife 2023*. In assessing the potential impacts and any mitigation requirements, consideration will be given to the existing airport environment (and the extent to which any proposed changes to airport infrastructure would affect the environment), airport security and operational requirements, the NASF and current and future airport safeguarding requirements, and consistency with planning and development requirements that apply to similar land, off airport.

With the adoption by BCC of the *Oxley Creek Transformation Master Plan* (2018) and subsequently the *Archerfield Wetlands Precinct Plan*, BCC has made significant commitments to improve the natural values and recreational use of the Oxley Creek corridor, including the section in proximity to the airport.

AAC will work with BCC to maintain the integrity of the airport wildlife buffer areas shown in Figure 13, and discussed in Chapter 9. AAC will seek to minimise the risk of wildlife strike through appropriate siting, design, implementation and ongoing maintenance of restoration works being undertaken in the Oxley Creek corridor, consistent with the NASF guidelines.

AAC will also continue to liaise with BCC where there are opportunities to work together to manage more efficiently and cost effectively the creekside airport land.

AAC will consider any feasible proposals that assist in improving current grazing practices or implementing alternative management techniques, where these are consistent with the sustainable management of the airport land and airport safety, security and operational requirements.

AAC will continue to facilitate the Fire Ant control measures being implemented by the State government.

Landscaping will be provided in new developments to improve the presentation of the site. AAC will encourage the planting of mainly indigenous species on airport property.

A list of suitable plants for landscaping on AAC property has been developed and will be used when assessing landscaping works by AAC or tenants.

All developments on the airport, including stormwater management works and site landscaping, will be planned and managed to ensure that they do not

increase bird or bat populations at the airport, due to the hazard to aircraft of bird or bat strike.

16.4 AIR QUALITY AND OZONE DEPLETING SUBSTANCES

16.4.1 Objective

To minimise where practicable emissions to air from AAC and tenant related activities (except emissions from aircraft)

16.4.2 Existing conditions

The airport is in the industrial area of Archerfield/Rocklea/Acacia Ridge, which is home to general manufacturing, and service industries; transport and related activities. The area is bisected by a network of arterial and main roads including Ipswich Motorway, Granard Road, Beaudesert Road, Boundary Road, Ashover Road, Kerry Road, Mortimer Road and King Avenue/Learoyd Road.

There are no significant sources of greenhouse gas emissions on the airport. No tenants or AAC operations produce significant discharges to the atmosphere.

A detailed audit of the airport in 1993/94 identified all equipment containing ozone depleting gasses. Since then, all BFC fire extinguishers have been removed (in December 1997), and there are no remaining air conditioners filled with Freon.

Archerfield Airport has no dedicated spray painting operations. Several tenant operations include spray paint booths as part of their maintenance activities and some tenants undertake minor painting, but as an ancillary activity.

There is the potential for some activities by tenants (either during construction, or in the operation of their activities) to generate dust, or track material onto the road network. This requires clean up and implementation of effective ongoing management measures.

16.4.3 Potential impacts

Experience at similar general aviation airports in Australia shows that a relatively small quantity of pollutants are released during the running of aircraft engines while on the ground for testing and maintenance procedures.

Most emissions are solvent vapours released either during the spray painting of aircraft bodies and components, or through cleaning of equipment.

Emissions would be similar to other spray painting and mechanical repairs establishments in the surrounding industrial areas. Due to the mix of uses and the extensive open space on airport the density of these uses is significantly lower than nearby industrial areas.

Dust from activities within a tenancy, or material tracked from airport sites could, if not appropriately controlled pollute the environment or cause nuisance to airport users or areas in the vicinity of the airport.

16.4.4 Management of impacts

Painting and cleaning

The main potential impact on the air environment from painting or cleaning operations is odour from solvents.

AAC has replaced its solvent based line marking paints with water based alternatives to reduce the emission of solvent vapour from this source.

For new tenancies, any potentially odorous activities will be identified and managed so that there is no unacceptable impact on neighbouring areas. If painting is proposed, consideration will be given to the acceptable scale of the activity, and any mitigation measures that will be required.

Measures for achieving appropriate odour control will be determined prior to the establishment of the tenancy, in accordance with the EMPs.

In the case of existing tenancies, if any odour emission issues arise, these will be addressed through direct negotiation (if a complaint is received) or via the periodic environmental review process.

All tenants that have trade waste discharges are required by AAC to obtain from UU appropriate trade waste disposal approvals, and maintain their operations in accordance with these requirements.

Ozone depleting substances (ODS)

AAC facilities

AAC operations will be managed to ensure that all discharges meet the requirements of relevant legislation being the *Airport (Environment Protection) Regulations* 1997, the *National Environmental Protection Measure (NEPM) for Ambient Air Quality,* the *Ozone Protection and Synthetic Greenhouse Gas Management Act 1989* and the *Ozone Protection and Synthetic Greenhouse Gas Management Regulations 1995*, which control the major end-uses of ozone depleting substances and synthetic greenhouse gases.

This legislation protects the environment by reducing emissions of ozone depleting substances and synthetic greenhouse gases.

Regular environmental reviews will identify any ozone depleting substances on site, and their phase out will be arranged.

The progressive phase out and replacement of any remaining AAC equipment containing ozone depleting gasses will also occur as replacement equipment becomes commercially available and older equipment is replaced.

Tenants

The regular environmental reviews of tenant facilities will identify any halon fire extinguishers (sometimes used in aircraft), and if any are found in service for non-essential use, the tenant will be advised to remove the equipment from service as required by State and Federal legislation.

As the presence of halon extinguishers will be readily identifiable during the regular environmental reviews, additional monitoring is not considered necessary.

Dust control

Control of dust emissions from tenancies, and prevention (and clean up) of tracking of materials onto the airport roads is addressed through:

- identifying with tenants the potential risks of their activities and appropriate control mechanisms;
- requiring tenants to identify and implement dust control mechanisms, in their Environmental Management Plan(s) (which are administered through their lease);
- requiring the preparation and implementation of a Dust Management Plan in situations where this is appropriate;
- including dust control measures in EMPs for works;
- identifying dust or material tracking issues through ongoing AAC observations, or receipt of complaints, or through tenancy reviews; and
- following up with rectification and ongoing management measures (through a Dust Management Plan).

16.4.5 Achievements 1998-2023

AAC has collated existing data on airshed quality from the QLD DES Rocklea monitoring site.

AAC has produced an inventory of existing airport tenants and users, as an indicative baseline for possible future air quality assessments.

Water based line marking paints are now used by AAC to reduce the emission of solvent vapour from this source.

AAC has collaborated with several industrial tenants located at the Beaufighter precinct concerning dust control and suppression measures each of which have contributed to tangible improvements.

16.4.6 Implementation targets for the 2023 AES

Continue to identify the presence of ODSs in AAC and tenant reviews, and negotiate appropriate management (including decommissioning and removal wherever feasible).

Continue to advise tenants of their responsibility to obtain relevant environmental approvals in accordance with the *Airports Act* and Regulations.

Continue to address the control of dust emissions from tenancies, and prevention (and clean up) of tracking of materials onto the airport roads through:

- identifying with tenants at the commencement of a tenancy the potential risks of their activities and appropriate control mechanisms;
- requiring tenants to identify and implement dust control mechanisms, in their Environmental Management Plan(s) (administered through their lease);
- including in EMPs for works dust control measures and requirements to contain material to prevent it being tracked onto roads;
- requiring the preparation and implementation of a Dust Management Plan for tenant operations in situations where this is appropriate;
- identifying dust or material tracking issues through ongoing AAC observations, or receipt of complaints, or through tenancy reviews; and
- requiring rectification within a specified timeframe, and ongoing management measures (through a Dust Management Plan).

16.5 SURFACE WATER

16.5.1 Objective

To minimise the impact of airport operations on surface water quality

16.5.2 Existing conditions

Catchment context

The airport is in the middle to lower reaches of the Oxley Creek catchment, just upstream of the confluence of Oxley Creek and Blunder Creek. Oxley Creek discharges ultimately to Brisbane River.

The airport location relative to the Brisbane River is shown diagrammatically in Figure 1. The location of Oxley and Blunder Creeks, and the alignments of the main drainage outfalls from the airport to these waterways is shown in Figure 3 *Airport context*.

The middle and lower reaches of the Oxley Creek catchment are highly urbanised.

The *1999 Oxley Creek Catchment Management Plan* identified the following issues for the catchment overall:

- water quality within the creek system exceeds standards across all water quality parameters (suspended solids, total nitrogen, total phosphorus, faecal coliforms) in the lower urbanised part of the catchment. There was however some evidence of improvements since 1988;
- the primary causes of the existing degradation are point sources such as the Inala Sewage Treatment Plant, minor point sources (sewer overflows) and the non-point sources of sand extraction, stormwater run-off and land development, including areas using septic treatment systems;
- Brisbane River and Moreton Bay, the receiving waters of Oxley Creek, are experiencing excess sediments, nutrients and faecal coliforms, giving rise to problems of sea grass loss and algal blooms;
- further development in the upper reaches of the catchment could exacerbate flooding;
- riparian vegetation including wetlands has some critical areas requiring management and buffering; and
- soil erosion is an issue along the watercourses.

Stormwater management on the airport site needs to have regard to these broader contextual issues, and in particular to avoid causing detriment to water quality or flood conditions in Oxley Creek.

Site sub catchments

Surface water runoff from the airport falls generally into one of six main sub catchments and these are shown diagrammatically in Figure 18.

The boundaries of the sub catchments are indicative only, as there are few clearly defined watersheds across the site. In some cases, drainage infrastructure has been constructed such that stormwater flows will cross between the sub catchments as currently shown.

All surface water from the airport is discharged ultimately to Oxley Creek, and from there flows to Brisbane River and Moreton Bay. The northern and eastern part of the airport drains to Stable Swamp Creek (to the north) which enters Oxley Creek on the north side of the Rocklea industrial area.

1: Southern sub catchment

This sub catchment includes:

- grassed areas;

- sealed Runway 10R/28L and taxiways;
- hangars and businesses;
- open storage; and
- the control tower.

This stormwater drains to the main detention basin that is located between the tenancies on the south side of Beaufighter Avenue and the neighbouring Archerfield Speedway. The detention basin then discharges to Oxley Creek.

A small part of this sub catchment drains south under Mortimer Road, and through the neighbouring industrial area to Oxley Creek. This drain collects water from the eastern end of Lores Bonney Drive, and from the adjacent tenancies.

2: Beaufighter Avenue and Wirraway Avenue sub catchment

This sub catchment includes:

- the western end of the 10L/28R runway and associated taxiways;
- the western part of Transition Estate and the other '500' tenancies on Boundary Road;
- development along Wirraway Avenue; and
- development along Beaufighter Avenue, generally west and north of sites 674 and 678.

Stormwater in this sub catchment is conveyed via a piped drainage system along Beaufighter Avenue to a concrete end wall and dissipation structure prior to entering Oxley Creek.

3: BP Truckstop

Stormwater from the BP Truck Stop site on the corner of Beaufighter Avenue and Boundary Road discharges to a drain at Boundary Road that runs north through the Rocklea industrial area before joining to the main drain to Oxley Creek.

BP has in place a Forecourt Pollution Control System (FPCS) which discharges into the stormwater system. The FPCS captures customer fuel spills occurring within the under canopy fuel dispensing area and treats captured oily liquids via an oil-water separator. Monitoring of stormwater downslope of the separator is undertaken quarterly.

4: Central sub catchment

This sub catchment comprises the grassed areas associated with the 04/22 runway complex, most of the northern half of the 10L/28R runway, the fuel farms,

and aircraft parking positions; the majority of Transition Estate and the southern part of the Ashover precinct.

The majority of storm water in this sub catchment is collected by an on airport drainage system that falls north-west under the 04/22 runways to the detention and water quality basins in Transition Estate, and then passes under Boundary Road.

The three bio-filtration and detention basins constructed adjacent to Boundary Road manage peak flows from Transition Estate, and from upstream sub catchments in the central part of the airport. A Gross Pollutant Trap constructed between Basin 4 and the corner of Boundary Road and Transition Drive further improves the quality of water from the central drainage sub catchment which includes parts of the Boundary, Wirraway, Ashover, Runway and Beatty precincts. The outfall from the basins runs through the neighbouring industrial area, under the Ipswich Motorway to Oxley Creek. Water in the Oxley Creek then enters the Brisbane River.

5: Eastern and northern sub catchment

The fifth catchment on airport is the eastern and northern area fronting Beatty Road, Barton Street and Balham Road.

The stormwater run-off from this area enters the BCC drains that run parallel with Beatty Road, and a drain running north from Balham Road. At three locations along Beatty Road there are drains under the road that take stormwater to the east and then north to Stable Swamp Creek.

Underground stormwater drains in this area of the airport were examined by CCTV camera and significant repair/upgrade work was carried out to improve drainage in 2015/2016.

This part of the sub catchment is reasonably intensively developed, with extensive impervious areas (building roofs, roads, sealed aircraft parking, and manoeuvring areas).

The balance of the sub catchment has at present less impervious surfaces. Stormwater from the north-west corner of the airport (at the corner of Balham Road and Ashover Road) is conveyed to basin no. 7 constructed by AAC before being discharged to the existing piped drains to the north of the airport, and then to Stable Swamp Creek.

6: Beatty Road South

The vacant airport land on the north-east corner of Beatty Road and Mortimer Road drains to the north-east. It discharges to the main drainage line that runs parallel to Beatty Road, to Stable Swamp Creek, and then to Oxley Creek.

Stormwater quality

AAC undertakes stormwater quality analysis on an annual basis. The sampling is undertaken at the main drainage discharge points, and at locations within the airport drainage network. During drought periods, there was insufficient water at some of the sampling locations resulting in incomplete historical data.

Notwithstanding this, the program has provided useful information about site conditions.

The latest assessment completed by Environmental Management & Remediation Pty Ltd found no concentrations that posed a serious risk to the aquatic health of the primary receiving waters, being Oxley Creek.

Generally, results were within the overall trend that has been established since annual assessments commenced in 2009.

Metal results were similar to previous monitoring events with no significant changes identified that would indicate a potential risk to Oxley Creek.

Historically, total nitrogen, total phosphorous, and ammonia have exceeded the AEPR guidelines. This was probably a result of fertilizers applied and being washed into the stormwater system following rain events. As surface water sampling only occurs after significant rainfall, exceedances of the AEPR guidelines for nutrients will likely continue.

There were no volatile or semi-volatile petroleum hydrocarbons ($>C_9$), or aromatic hydrocarbons (BTEX) detected in the water samples. This was generally consistent with previous monitoring events.

The current guideline values for PFAS in surface waters relate only to PFOA and PFOS. PFOA concentrations were not above the referenced guidelines for 95% or 99% protection of freshwater or marine water species. PFOS concentrations all exceeded the 99% protection level for marine and freshwater species.

At present there is no marine water guideline for PFOS or PFOA. The guidelines used are interim guidelines that are the same value as the freshwater guidelines. It is expected that a guideline specific to marine water will be established in the future.

The risk level posed by PFOS was considered low when compared with the background levels recorded in Oxley Creek in the *Queensland Ambient PFAS Monitoring Program 2019-2020*, published by the Queensland Department of Environment, Science and Innovation (DESI) in October 2020.

16.5.3 Potential impacts

The potential impacts of stormwater drainage are:

- export of suspended solids off site leading to increased sedimentation of Stable Swamp Creek or Oxley Creek;
- transport of chemical pollutants, trace elements, or nutrients into these creeks and ultimately into Brisbane River;
- increased peak flood flows discharged to Oxley Creek, with the potential for exacerbating flooding in the creek; and
- increased peak flows into the existing main drainage system through the Rocklea industrial area, and through Archerfield, north to Stable Swamp Creek.

Onsite conditions also have the potential to affect water quality including from acid sulphate soils, current and historic airport operations including legacy firefighting and training activities, and imported fill.

16.5.4 Management of impacts

AAC is vigilant regarding stormwater management on the airport.

The following EMPs have specific relevance to managing the water aspects of the airport environment:

- Procedure AA1-*Environmental assessment of new tenancy or lease renewal*;
- Procedure AA4-*Minor spill response*;
- Procedure AA6-*Tenant environmental reviews*;
- Procedure AA7-*End of lease tenant environmental review*; and
- Procedure AA8-*Assessment of environmental effects of new works*.

For example, the procedure for new construction requires an assessment of the potential impacts of construction on all aspects of the airport environment (including stormwater drainage), and where impacts are possible, the preparation of a construction phase *Site Environmental Management Plan* (CEMP).

Washing of aircraft in the wash-down bay (with triple interceptor) is strongly encouraged.

If there is a risk that oil, grease, or fuel (including residues) will be discharged onto the ground, then the wash-down bay must be used. If there is regular washing of aircraft in parking positions, then AAC reserves the right to request water and/or soil testing to monitor for any contamination and identify any consequential management measures. This monitoring would be at the aircraft owners' expense.

AAC maintains a spill containment trailer that can be mobilised at short notice to deal with fuel and chemical spills from its own operations and for incidents involving aircraft.

Where appropriate, tenants are also required to have spill procedures for their operations. In addition to providing appropriately bunded storage facilities, tenants are also required to maintain stocks of spill control equipment where their operations have the potential to release environmentally hazardous materials to the environment.

AAC is also implementing progressively stormwater management works to address water quality and discharge volumes from each sub catchment, having regard to both existing conditions, and management of discharges from new developments.

16.5.5 Achievements 1998-2023

Stormwater management measures (addressing water quality and peak discharge volumes) have been incorporated where appropriate into new tenancies and into the airport development precincts.

The former open drainage line through the western part of the Boundary precinct and the west of the Beaufighter precinct (which was subject to significant scouring) has been piped, and silt traps and dissipation structures installed to moderate peak flows and manage water quality prior to discharge to the Oxley Creek.

A significant stormwater detention basin (basin 8) was constructed in the Beaufighter precinct in 1997/8, treating stormwater prior to its discharge to the Oxley Creek. The stockpile areas in the Alex Fraser Group Recycling facility drain to a sedimentation basin prior to discharge to the on-airport stormwater system.

Swale drains have been constructed along the southern boundary of the Beaufighter precinct, to direct flows from Runway 28L/10R and development in the Beaufighter precinct to the sediment basin.

Three additional bio-filtration and detention basins (Basins 3, 4 and 5) were constructed along the Boundary Road boundary of the airport in 2014 to manage peak flows from future works at Transition Estate. A Gross Pollutant Trap was constructed between Basin 4 and Boundary Road/Transition Drive to further improve the quality of water from Boundary Road and Transition Drive. These basins convey water to BCC drainage systems,

Small rock landscaping has been introduced to localised sections of open drains showing evidence of minor soil erosion.

The drainage line under the 04/22 runways has been piped and extended into Basin 3 at the north-western end, to moderate peak flows prior to discharge to the district drainage network.

Rainwater tanks have been included in new developments, including the corporate hangars on Wirraway Avenue, the QGAir facility on Wirraway Avenue,

the office and warehouse development on Beaufighter Avenue, and the warehouse and office at Site 111, the Hangar 4 redevelopment, the new logistics facility at site 581, and the Hangar 13 development.

Open earth drains have been periodically slashed and weeds removed.

The aircraft wash down bay is identified with signage. Washdown water passes through a triple interceptor prior to discharge from the site.

Surface water quality monitoring has been undertaken at various locations in the drainage network on an annual basis.

The stormwater management system for the 10L/28R runway, the associated primary taxiways and the Eastern Apron has been upgraded as part of Project AIM.

Stormwater management in the Ashover precinct has been improved with the construction of new drains for the 300 sites, the construction of Ashover Circuit, and construction of a new stormwater basin (Basin 7) at the northern end of the precinct. The new basin now manages stormwater runoff from the northern sub catchment, prior to discharge to the external BCC drainage network which runs north to Stable Swamp Creek.

16.5.6 Implementation targets for the 2023 AES

The annual surface water quality assessments will continue at spot locations, on a sub catchment basis, will be analysed for contaminants, and the findings will be included in the annual environment report to DITRDCA.

Where elevated concentrations are found, AAC will adopt a risk based approach to undertaking further sampling, and where appropriate will undertake further investigations within the relevant sub catchment area(s) to identify the likely cause of reduced water quality. It will work with the AEO to identify the source and improve water quality wherever feasible.

If necessary, the surface water monitoring program will be revised to assist with identifying the distribution or source of pollutants.

Water sensitive design measures, including the use of rainwater tanks for capture and reuse of stormwater flows will be incorporated into new developments wherever feasible.

AAC will continue to engage with BCC to identify opportunities to work in partnership to manage and improve water quality in Oxley Creek.

16.6 GROUNDWATER

16.6.1 Objective

To minimise the impact of airport operations on groundwater quality

16.6.2 Existing conditions

Groundwater at the airport has been assessed on an annual basis since 1993.

A network of groundwater monitoring wells has been progressively developed and expanded since inception to ensure all on-airport areas are covered as well as to test contamination coming onto airport from off-site locations. All operational wells are shown in Figure 30 *Groundwater*.

The most recent assessment, the *2022 Ground Water Monitoring Event for Archerfield Airport* was completed by Environmental Management & Remediation Pty Ltd in June 2022. The findings are set out in the 'groundwater quality' section below.

Regional hydrogeology

The *2013 Annual Ground Water Monitoring Report* by Simmonds & Bristow included information about the existing site conditions as follows:

The site geology consists of Tertiary semi consolidated sediments and basalt (Sunnybank Formation). It is estimated that the basalt dips to the west. Underlying this is the Triassic-Jurassic Woogaroo Sub-group which is comprised of sandstone, siltstone, shale and conglomerate. These rocks are less permeable to groundwater flows than basalt. Alluvial deposits occur along Oxley Creek (southwest boundary) and Stable Swamp Creek further north.

Potentiometric contours have indicated that the groundwater flow across the site is in a northwest direction. This was supported by the findings of the 2014 groundwater monitoring report.

Therefore, the receiving environment for groundwater would be the section of Oxley Creek along the airport's south west boundary and in areas immediately adjacent to the creek.

Groundwater from the site would also tend to flow further northwest toward the junction of Oxley Creek and Stable Swamp Creek. The indicative flow direction is shown in Figure 30.

Beneficial uses of groundwater

Groundwater resources in the area are not used for potable supply. Various tenancies in the Beaufighter precinct use water for dust suppression.

Underground storage tanks (UST)

The USTs on site are required for current uses and are summarised below.

TABLE 13: UNDERGROUND STORAGE TANKS

Site	Tank Reference	Fuel type	Capacity (litres)
AAC Compound (Site 652)	AAC-HMR_009	Diesel	350
BP Truckstop (Site 450)	AAC-HMR_010	Diesel (ADF)	110,000
	AAC-HMR_011	Diesel (ADF)	110,000
	AAC-HMR_012	ULT-98 (PULP)	30,000
	AAC-HMR_013	ULP-91	50,000
	AAC-HMR_014	PULP-95 (ULT)	30,000
	AAC-HMR_015	LPG	30,000
AvFuel Services (Site 123)	AAC-HMR_001	Jet A1	52,200
	AAC-HMR_002	Jet A1	52,200
AvFuel Services (Site 120)	AAC-HMR_006	Avgas	82,000

Above ground storage tanks

The following above ground storage tanks are in use at Archerfield.

TABLE 14: ABOVE GROUND STORAGE TANKS

Site	Tank reference	Fuel type	Capacity (litres)
AvFuel Services (120)	AAC-HMR_005	Jet A1	51,500
Queensland Government Air (EMG Helicopter) (412)	AAC-HMR_018	Jet A1	5,000
Bondwoods Transport (AUST) (508)	AAC-HMR_020	Diesel	13,000
DDS Transport Solutions (311)	AAC-HMR_021	Diesel	10,000

BP Spill

In 2006 one of the diesel tanks at the BP Truckstop on the corner of Boundary Road and Beaufighter Avenue was found to be leaking.

The tank was removed and a soil and groundwater remediation and monitoring program was implemented by BP, under the supervision of an independent environmental assessor.

The tanks and related infrastructure were replaced with double walled tanks and pipes.

The groundwater and soil remediation works were undertaken in accordance with an Environmental Management Plan. The remediation phase has been completed, and the site is now under a monitoring and reporting program.

Groundwater quality

Groundwater quality is assessed on an annual basis, with AAC records going back to 1993. The 1993 study found that BTEX, TPH and metal concentrations were below method detection limits in all monitoring wells.

In 2003-4 AAC reviewed its water quality monitoring program and serviced and upgraded monitoring wells.

In 2013, following a review of the monitoring program, four new bores were installed along the area bounded by Mortimer Road, Wirraway Avenue and lower Beaufighter Avenue. The new bores were sited to provide more comprehensive analysis of off-site and on-site activities including near MW4 and MW9. The review also found that off-site activities behind MW2, MW3 and MW6 had an impact on the levels of heavy metals in the groundwater.

The subsequent groundwater monitoring report, in October 2016, concluded that, overall, the groundwater concentrations reported do not indicate that a serious risk exists to the water quality or aquatic ecosystem of Oxley Creek.

The most recent sampling and analysis was completed in June 2022 by Environmental Management & Remediation Pty Ltd. The purpose of the annual assessment is to identify whether there have been changes in groundwater quality that may present a potential risk to human health or the environment.

The 2022 assessment concluded the inferred groundwater flow direction was broadly towards the west-northwest, generally consistent with the findings of previous assessments. The flow direction however in the northwest and western portions of the site appeared to follow a south to southwest trend (see Figure 30 *Groundwater*).

Changes in groundwater quality and general findings have been summarised as follows:

- The dissolved heavy metal concentrations were mostly below the laboratory detection limits or AEPR guidelines except for minor exceedances of the freshwater guidelines for copper and/or zinc (MW2, MW4 and MW9) and one exceedance of the marine water guidelines for copper and nickel (MW10).
- As the marine water exceedances were minor, it was concluded that there were no potential risks to the receiving environment, that being the aquatic health of Oxley Creek.
- Consistent with the previous annual assessments, TPH/TRH/BTEXN concentrations were either not detected or well below AEPR guidelines for samples MW4, MW5, MW14, MW15 and MW16. As a result, fuel storage (past or present) was not affecting the aquatic health of Oxley Creek.

- PFAS compounds were detected and all PFOA concentrations were below NEMP 2.0 freshwater and marine guidelines for 95% and 99% species protection.
- All PFOS concentrations exceeded the NEMP 2.0 freshwater and marine water guidelines for 99% species protection, and there were some exceedances of the 95% species protection level.

The assessment concluded that future monitoring should determine if the PFAS concentrations are trending upwards and if this trend is having an adverse impact on the downgradient groundwater quality.

At present the risk profile has not changed from past annual monitoring assessments based on the current groundwater analytical results.

AAC continues to monitor sampling results and works closely with the AEO to attempt to identify the source/s of any contamination.

16.6.3 Potential impacts

Impacts in groundwater from activities on airport could arise from:

- potential PFAS contamination as a result of legacy AFF storage, use and training activities from past government agencies (e.g. ARF);
- leaking USTs and related infrastructure (pumps, pipes etc.);
- inappropriate storage, handling or disposal of hazardous materials;
- buried waste (including from past occupiers);
- spills from the UU sewer pump station off Beaufighter Avenue (and near Oxley Creek); or
- material spills.

Onsite conditions also have the potential to affect water quality including acid sulphate soils, current and historic airport operations including legacy firefighting and training activities using foams containing PFAS, and imported fill.

Similarly, there is the potential for areas surrounding the airport to impact on the groundwater conditions on airport. The past and present industrial uses, wartime developments, and the former quarry on the north side of Mortimer Road (next to the south-east corner of the airport) are all potential sources. These need to be considered in any groundwater monitoring program.

16.6.4 Management of impacts

AAC has in place several measures to protect groundwater from contamination by airport activities.

These include:

- annual monitoring of groundwater via the network of bores on site;
- provision of spill containment equipment for deployment by AAC in areas under its direct management;
- decommissioning of old and redundant USTs;
- discouraging tenants from installing new USTs if bunded above ground storage is feasible;
- requirements in the EMPs for new tenants to address hazardous materials storage and containment in their plans; and
- consideration of spill containment during tenant reviews.

Any new UST and related infrastructure must be installed and operated in accordance with industry standards.

Existing tanks and related pipe and pumping infrastructure require ongoing monitoring to confirm the integrity of the fuel storage system. Any losses from the system need to be identified early so that remedial action can be taken.

AAC confirms during the environmental reviews of each tenancy with USTs that monitoring is being undertaken.

16.6.5 Achievements 1998-2023

The network of groundwater sampling bores is reviewed on an annual basis for efficacy, and has been progressively developed since 1993.

The system was serviced and upgraded in 2003, and a new groundwater monitoring well was established in the area between Beaufighter Avenue and Oxley Creek for the 2010 monitoring cycle. This provides baseline data about groundwater conditions and movement in the south-western part of the airport.

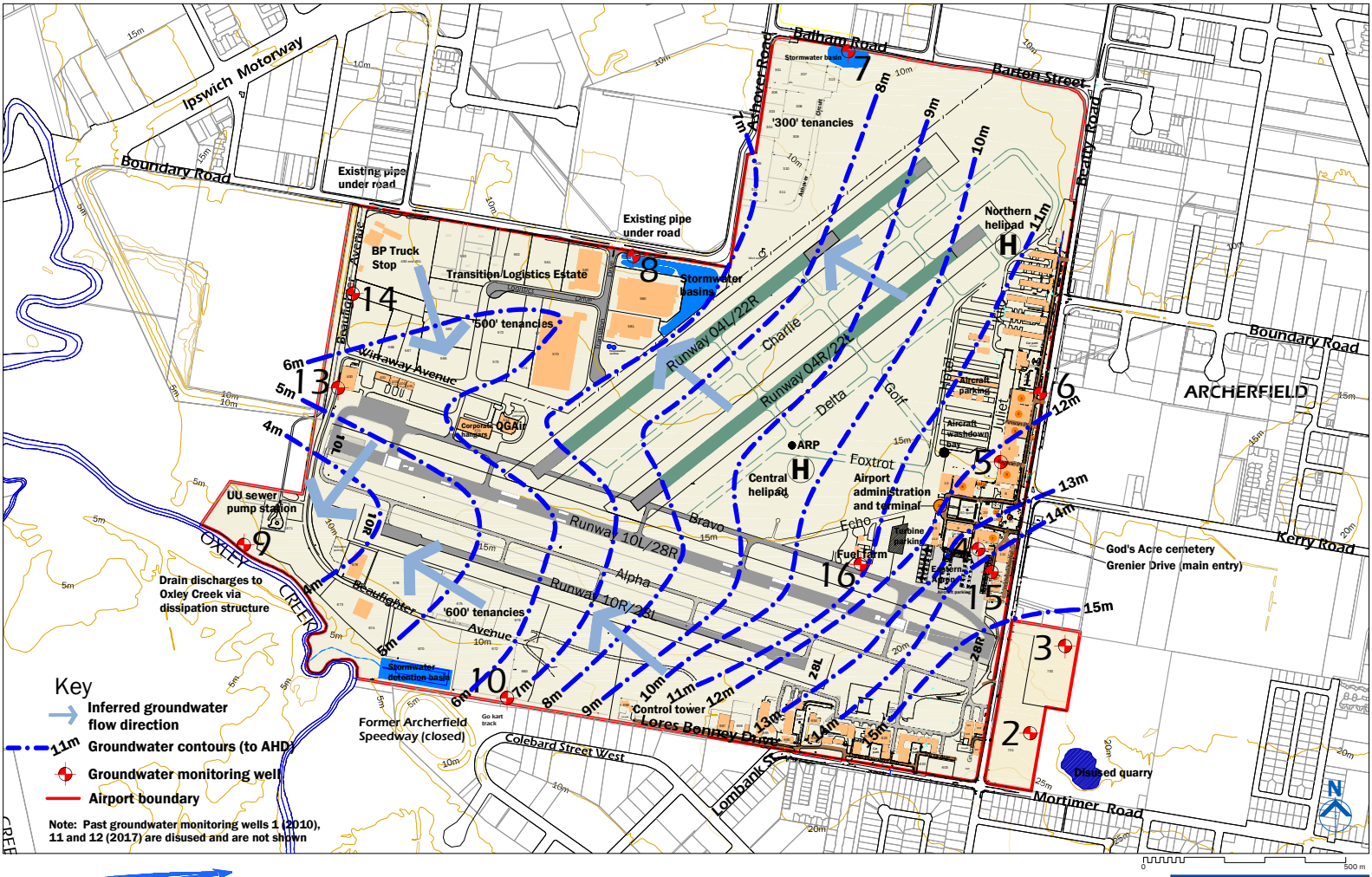
An additional 6 new wells were installed along the Mortimer Road boundary and Beaufighter Avenue boundary between 2012 and 2015 and two unserviceable wells in other locations were repaired.

The annual groundwater monitoring program by AAC has continued throughout the planning period and now provides data for the past 20 years. The scope of ground water monitoring has also been increased to sample for a larger range of contaminants of potential concern (CoPC).

Annual integrity testing is carried out on AAC's underground diesel tank. No loss of product has been identified.

All tenants with USTs have in place gain/loss monitoring systems.

Various USTs and infrastructure have been removed as part of redevelopments at sites 108, 109 and 121 (which included the decommissioning and removal of a 55kl Jet A1 fuel tank and a 55kl Avgas tank).



Archerfield AIRPORT

Archerfield Airport Master Plan 2023-2043

Figure 30 **Groundwater**

PlannedFX Planning Environment Strategy Design

16.6.6 Implementation targets for the 2023 AES

AAC will continue to implement the management measures set out in 16.6.4.

The annual groundwater monitoring and analysis program will continue. Attention will be given to determine the likely reasons for any elevated levels.

The scope of testing, and sampling undertaken will continue to be reviewed as part of the annual assessment, and refinements made to the monitoring program if required.

The condition and operation of the network of wells will also continue to be reviewed on an annual basis, and works undertaken if required to ensure the integrity of the monitoring program.

AAC will during the cyclical environmental reviews follow up tenants with USTs to ensure that monitoring for losses is being undertaken, and immediate corrective action is taken if any losses are identified.

AAC will continue to undertake annual integrity testing of the diesel UST in the AAC grounds maintenance compound. If any discrepancy is identified immediate remedial action will be taken. These actions will be in accordance with Australian Standard AS4897–2008, *The Design, Installation and Operation of Underground Petroleum Storage Systems*.

Any new USTs will be subject to either an integrity testing plan or an appropriate gain/loss monitoring system. The testing, monitoring, and reporting regime will be in accordance with the relevant industry standards.

16.7 SOIL

16.7.1 Objectives

To minimise the potential for soil contamination to occur

To continue to manage contaminated sites in accordance with relevant legislation

16.7.2 Existing conditions

Soil conditions at the airport consist of silty and sandy clays that overlay weathered basalt. The basalt becomes less weathered as depth increases.

Soil contamination

In July 1993, a *Background Investigation Report* (Otek 1993) identified several potential areas of subsurface contamination associated with the airport. These included a number of USTs, scrap yards, a battery recycling operation, maintenance shops, painting facilities, and drum storage areas.

A subsequent more detailed environmental investigation (Otek September 1993) found that Benzene, Toluene, Ethylbenzene and total Xylenes (BTEX) and Total Petroleum Hydrocarbon (TPH) levels were below method detection limits in all borings tested. Metal analyses indicated elevated levels of lead in proximity to the former battery recycling facility. The study concluded that detectable concentrations of nickel, copper, cadmium, and chromium were consistent with background concentrations and were within applicable criteria. Analyses for volatiles, pesticides, and PCBs showed no concentrations above the method detection limits.

The study found no adverse impact on the environment from the USTs.

The minimal localised soil contamination detected in the Otek environmental reviews was well within the current acceptable environmental standards.

Otek, in 1993 also undertook soil sampling in the open unlined drains along the northern and western perimeters of the site. The analysis of the samples concluded that there was no detectable soil contamination.

In 2006 BP advised that one of the diesel tanks at the BP Truckstop on the corner of Boundary Road and Beaufighter Avenue was found to be leaking. BP subsequently replaced all tanks and implemented a soil and groundwater remediation and monitoring program, under the supervision of an independent environmental assessor. This is subject to ongoing assessment and reporting.

An independent environmental assessor has overseen the containment of pollution and the implementation of the remediation works, and the monitoring program which is still in place. Contaminated soil was excavated to the maximum feasible extent (some allowance had to be made for protection of canopy foundations and other structural elements). The soil was farmed on adjacent land on the airport for approximately six months, before being disposed of off-site.

The USTs on the site have been replaced with double walled tanks and related infrastructure.

Environment Site Assessments (ESA) are completed across the airport and the results of which are entered into the Airport Environment Site Register. Such investigation can be triggered as a result of a new building activity, lease commencing, lease end requirement and/or incidents. Soil sampling is a primary function of the ESA.

Soil samples have also been tested from Site 635, at Site 668 (formerly occupied by Australian Paving Services (APS) and at Building 9. In all instances, no contamination above accepted levels was detected.

Acid sulfate soils

As part of the Brisbane City Plan, BCC has collated information about acid sulfate soils in the Council area, and made available a potential and actual acid sulfate soils overlay which identifies land subject to the requirements of the State Planning Policy (SPP).

The State government describes acid sulfate soil as follows:

> *Acid sulfate soils are coastal soils and sediments containing iron sulfides (mainly pyrite).*
>
> *They cover approximately 2.3 million hectares of land and occur naturally along the Queensland coast, usually where land elevation is less than 5 metres Australian Height Datum (AHD). Soil or sediment containing highly acidic soil horizons (or layers) affected by the oxidation of iron sulfides is known as 'actual acid sulfate soils'. Soil or sediment containing iron sulfides or other sulfide material that has not been exposed to air and oxidised is known as 'potential acid sulfate soil'. The term 'acid sulfate soils' includes both.*
>
> *The exposure of potential acid sulfate soil to oxygen (e.g. through dewatering, excavation or filling) results in the production of sulfuric acid and soluble iron, which can be released into receiving waters. The acid corrodes concrete and steel infrastructure and, together with the metal contaminants, can kill fish, other aquatic organisms, native vegetation and crops, and affect human health (e.g. if groundwater supplies are used for urban and domestic drinking water).*
>
> *Appropriate planning and development controls can minimise these risks. However, avoiding the disturbance of these soils is always the preferred strategy*

In Brisbane, acid sulfate soils are generally found in land at or below 5m Australian Height Datum (AHD) and in Holocene sediments (organic-rich sediments and silts). They are usually associated with coastal lowlands and estuarine flood plains. Under natural conditions the soils are usually located below the water table.

The only parts of the airport at or below the 5 metre contour are found in the south-west corner of the site, next to Oxley Creek. The 5 metre contour is shown in the *Existing conditions* drawing.

In the absence of appropriate management, acid sulfate soils may affect the following key environmental values or uses:

TABLE 15: POTENTIAL EFFECT OF ACID SULFATE SOILS

Environmental values	Impact or potential impact
Aquatic ecosystems	Aquatic ecosystems may be affected by changes to water and soil quality. This can lead to negative effects on the species and ecological communities that depend on this ecosystem.
Primary industries	Irrigation water may be acidic and/or have high concentrations of metals, which may affect stock drinking water, infrastructure and machinery, and crop growth and yield. Commercial fisheries may be affected by poor water quality that may cause fish kills or disease, and affect human consumption of aquatic foods.

Environmental values	Impact or potential impact
Recreation and aesthetics	An environment may not be able to be used or enjoyed to the same extent for recreational purposes due to factors including acidic water, odours, loss of aesthetic appeal, loss of fishing amenity and acid-tolerant mosquitoes increasing in number.
Drinking water	Water quality may be unsafe for human consumption due to factors such as pH change, changes to the concentration of dissolved metals or load of suspended metals and tastes and odours.
Industrial water	Water may not be suitable for certain industrial purposes. For example, acidified water may corrode metals in the manufacturing process.
Cultural and spiritual values	Areas of cultural and spiritual significance may be degraded or may not be able to be used for cultural, recreational or consumptive uses. Significant fish and plants may be affected by acidic water, metal contamination or oxygen depletion in water.

16.7.3 Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS)

There is potential for a range of manufactured chemicals known as per- and polyfluoroalkyl substances (PFAS), in particular perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA), to exist on airport. Consistent with other airports in Australia, this is likely to be a result of legacy firefighting activities.

PFAS are non-biodegradable chemicals that are highly persistent in the environment, can bio-accumulate, and can be harmful to animals and human health.

PFAS have wide ranging applications throughout the world and their presence in an airport context is often linked to historical fire-fighting incidents, training, maintenance of equipment, industrial uses, storage or other activities.

There is also the potential for PFAS in soil or groundwater to originate from activities on adjacent or nearby land, including from use in industrial, commercial and residential applications.

To gain an understanding of the background levels of PFAS on airport and coming from off-site areas, AAC includes PFAS testing in the annual surface and groundwater monitoring program. Data from this testing, and from Environmental Site Assessments is included in the airport's PFAS profile, which maintains up to date datapoints from all assessments that are undertaken. Testing undertaken to date has shown that no concentrations have been high enough to pose a risk.

AAC has taken proactive measures to not only identify, monitor and mitigate PFAS contamination, but also to actively ensure all airport tenants and contractors are aware of the potential for, and risks associated with PFAS contamination.

AAC is committed to working with environmental experts, as well as relevant local, state and federal government agencies, to address and responsibly manage any potential PFAS concerns.

AAC is participating in Tranche 2 of the *Commonwealth Airports PFAS Investigation Program* and works are underway.

In addition, periodic ground and surface water monitoring events have incorporated PFAS testing into the scope with the aim of identifying, tracking and monitoring PFAS datapoints and trends throughout the airport.

Maintenance, new building activities and developments are required to comply relevant national guidelines when appropriate. These include the *PFAS National Environmental Management Plan Version 2.0* – January 2020 (Heads of EPA Australia and New Zealand).

Additionally, PFAS soil screening may be completed as part of any new building activity (where indicated from a risk assessment). Results of all PFAS testing completed on airport are added to the PFAS datapoint tracking tool.

AAC will continue to liaise with DITRDCA on this issue, to ensure that the most appropriate actions are implemented for environmental assessment, ongoing monitoring or for remediation of any contamination that might be identified.

16.7.4 Potential impacts

The main potential impacts of airport activities are:

- soil contamination from USTs;
- soil contamination from chemical spills;
- soil contamination from oil leaks from aircraft and motor vehicles; and
- soil contamination from PFAS as a result of historic firefighting activities.

16.7.5 Management of potential impacts

AAC will continue to review activities on airport to identify any potential sources of soil contamination. For AAC operations and areas under AAC management, this will occur on an ongoing basis. Individual tenancies will be assessed during tenant reviews, and at the end of lease assessment.

Underground storage tanks and businesses associated with the storage and use of potential contaminants (including waste materials) will attract specific surveillance.

All new AAC leases have the requirement for tenants to monitor for contamination, and where issues arise, to remediate. These activities will in each case be addressed through a tenant *Site Environmental Management Plan* for construction and/or operation phases (as applicable).

Tenants will be required to provide AAC with independent validation of site clean-up works.

AAC will encourage tenants to decommission underground tanks, regardless of condition, due to the significant potential liability associated with the ageing underground infrastructure. In the future, all storage tanks installed on the site (apart from fuel services) will wherever possible be above ground with appropriate containment, including bunding.

Bunding of hazardous materials storage equipment (containers and conveying infrastructure) will be required where there is the potential for spills.

AAC's PFAS Desktop Assessment will be applied to any development or works involving minor excavation. Additional PFAS sampling and analysis will be completed if indicated from the findings of the desktop assessment, or as part of the Environment Site Assessment (ESA) process for more extensive building activities.

Any future development in the lower lying land in the south-west corner of the airport, immediately adjacent to Oxley Creek, needs to take into account the possibility of acid sulfate soils. This should be addressed in an assessment to be undertaken as part of the formulation of any development proposals for the land at or below the 5 metre (AHD) contour.

In addition, if excavation of more than 100m^3 is proposed at or below 5m AHD on land with a natural surface level of between 5m and 20m AHD, appropriate consideration will be given to acid sulfate soils in the design and construction of the works.

16.7.6 Achievements 1998-2023

The former battery recycling site has been remediated by removal of the contaminated soil and reclamation with clean fill in 1994. The remediation is described in report reference B94C094/C1 prepared by Otek Australia Pty Ltd dated 14 December 1994.

The former Airport Rescue and Fire Training Area was closed and remediated to standards applicable at that time in 1994. The site remediation is also described in the 14 December 1994 report by Otek Australia Pty Ltd.

The former underground storage tanks used by Mobil, Air BP and Shell were decommissioned and the sites remediated over the period 1997 to 2000. More recently, USTs associated with site 121 in the fuel farm have been removed and the sites remediated.

The assessments indicate that only small contamination issues such as oil leaks from aircraft and motor vehicles exist on the airport.

16.7.7 Implementation targets for the 2023 AES

All tenants operating or proposing to install underground storage tanks will be required to institute programs to ensure tanks do not leak. Tenants will be required to carry out annual testing of tanks, or alternatively implement a continual monitoring program as detailed in the Australian Institute of Petroleum's Code of Practice, *'CP4 1998, Design, Installation and Operation of Underground Petroleum Storage Systems'*.

Bunding will be required for all new storage facilities for hazardous materials.

AAC will continue to apply EMPs (and in particular the *End of lease tenant environmental review*) to ensure that leaseholds are appropriately managed and any contamination is identified and rectified.

AAC will undertake a PFAS Desktop Assessment for any development or works involving minor excavation. Additional PFAS sampling and analysis will be completed if indicated from the findings of the desktop assessment, or as part of the Environment Site Assessment (ESA) process that will be required for more extensive building activities.

An assessment for acid sulphate soils will be undertaken before undertaking any development requiring ground excavation in the south-west corner of the airport, at or below the 5 metre (to AHD) contour.

16.8 HAZARDOUS MATERIALS AND WASTE MANAGEMENT

16.8.1 Objectives

To minimise the use of hazardous materials, where practicable

To minimise the quantities of waste produced where practicable

To maintain current information on hazardous materials on the airport

To ensure that wastes are properly handled, stored, transported, and disposed of

To encourage recycling of materials

16.8.2 Existing conditions

Effluent

The airport is serviced with reticulated sewer and is connected to the metropolitan network (including for trade waste).

UU has a sewer pump station in the south-west corner of the airport, adjacent to Oxley Creek, and a second low pressure sewer system services Transition Estate and the Ashover precinct, discharging to the sewer network in Ashover Road.

Hazardous materials

AACs objective is to minimise where practicable the use of hazardous materials and to ensure that where hazardous materials are used, their impact on the surrounding environment is kept to a minimum.

Hazardous materials are stored in a variety of locations at the airport, and while some storage is well designed, others require some improvement. There is also a need for constant vigilance to ensure that the storage methods and signage are appropriate to the types of product storage currently in use. Australian Standards will apply.

Potentially contaminated building materials

A comprehensive survey of buildings conducted in 1994/1995 and reviewed regularly since then has found evidence of some in situ building materials likely to contain asbestos. These materials are mostly in sheet 'fibro cement' form and have been used most commonly for cladding some buildings, and roofing in particular. There are also incidences of asbestos in other building materials including flooring.

The survey found that this is confined to older existing structures, and, provided it is not disturbed from its current state, is regarded as not presenting any hazard.

The survey also identified a limited amount of asbestos fibre used in pipe lagging.

In 2003 Asbestos Audits Queensland Pty Ltd completed its *Asbestos Materials Report and Register for Archerfield Airport.* The report addressed all AAC buildings on the airport and included an inventory of asbestos, and recommendations for its management.

In 2006 the asbestos register was upgraded to include a risk assessment and Management Plan, which was updated as developments occurred, buildings were demolished, and buildings came into the ownership of AAC.

In 2012 Asbestos Audits Queensland Pty Ltd prepared a new *Asbestos Management Plan and Register for Archerfield Airport* which incorporated new buildings and recognised 2011 codes of practice.

This register and management plan was again updated and reissued in 2015 and 2022. AAC updates the plan as asbestos is removed.

Recycling

AAC's objective is to comply with current waste management standards and to minimise waste. It will ensure that it adopts the most recent recycling practices.

Where possible during tenant reviews opportunities to minimise waste or utilise waste from other activities on site will be identified.

16.8.3 Potential impacts

The potential impacts of ground based airport activities include discharge of hazardous materials or waste to soil, surface or groundwater; and litter pollution of the site or neighbouring land.

16.8.4 Management of impacts

AAC maintains a current register of asbestos in its buildings. Asbestos material is marked with hazard stickers, and the asbestos register is made available to tenants and contractors undertaking work on the airport.

The asbestos register is updated as works are undertaken, and any changes are included in the annual environment report to the Commonwealth.

If buildings containing asbestos are to be demolished or modified, this work will be undertaken in accordance with an Environmental Management Procedure applying precautions stipulated under the *Work Health & Safety Act* and regulations, applicable codes of practice and other relevant guidelines.

Monitoring of the quality and quantity of waste materials on site, and the actions taken to recycle this material will continue as part of environmental reviews of tenant operations. AAC operations and high risk tenants are assessed on an annual basis.

Waste management on the airport, including collection and off site disposal for AAC operations and all tenants, is undertaken by the AAC appointed contractor. This is a lease requirement, for all tenants.

Ongoing reviews will ensure environmental issues previously identified are addressed appropriately, as well as identifying any new issues related to the management and disposal of hazardous materials and wastes.

Environmental reviews will include an inspection of storage facilities and work practices, identification of unacceptably large waste stockpiles and a review of tenant records concerning the proper disposal of industrial wastes.

The regular environmental reviews will be supplemented by the on-going vigilance of all AAC staff. AAC personnel noticing unacceptable work practices, such as improper storage or leaking wastes will report their findings to AAC management for action.

The Archerfield EMPs require prospective new tenants (tenants or renewing their lease) to provide details of the materials they propose to store and use on site, and how these will be managed.

16.8.5 Achievements 1998-2023

AAC has conducted regular inspections of tenancies to identify all materials storage and handling, waste management and disposal and other aspects of the activities conducted in the tenancy that could potentially impact on the safety of the airport, or on the environment.

BCC regularly tests sewage entering its treatment system from the airport. Any non-conformances are reported to AAC and the tenant (if applicable) for action.

In May 2003 Asbestos Audits Queensland Pty Ltd completed its *Asbestos Materials Report and Register for Archerfield Airport.* The register was maintained until 2006 when a risk assessment and management plan was formulated.

This guided decisions on the ongoing management of asbestos until 2012 when the *Asbestos Management Plan and Register for Archerfield Airport* was implemented. The 2012 plan is subject to ongoing review and updating as works are completed.

A significant quantity of asbestos was removed between 2012 and 2015 as a result of extensive repair and upgrade works to various hangars and buildings.

AAC has compiled a register of chemical and hazardous materials for its grounds maintenance and works activities (2009).

The HAZMAT Register is provided to the Department annually as part of the Airport Environmental Reporting (AER) process and contains details of all large volumes of fuel stored on airport.

16.8.6 Implementation targets for the 2023 AES

Maintain the AAC asbestos register, management plan and risk assessments.

Review AAC operations and expand the Hazardous Materials Register as required.

Develop a Hazardous Materials Register for relevant tenancies and prepare baseline snapshot.

Monitor hazardous materials on airport through tenant reviews and record quantities of hazardous materials in a Hazardous Materials Register.

Ensure that tenants have hazardous materials licences where applicable and have a HAZMAP located at the site entrance.

Monitor the quality and quantity of waste materials on the airport.

Continue to require through lease conditions, the use of the AAC appointed contractor for collection and off site disposal of waste from tenancies.

Comply with regulations relating to the management of PFAS on airport.

16.9 USE OF NATURAL RESOURCES AND ENERGY

16.9.1 Objectives

To identify opportunities for cost effective reductions in consumption of natural resources and energy

To encourage efficient use of water and energy

To encourage the use of alternative sources of energy and water

To reduce airport use of non-renewable resources

16.9.2 Existing conditions

Archerfield Airport is supplied with reticulated water, mains power and other utility services from the Brisbane urban infrastructure networks.

Water

Sustainable Solutions International Pty Ltd prepared a *Water Efficiency Management Plan* (WEMP) for Archerfield Airport in April 2008.

The WEMP included a detailed assessment of past and existing water usage, and identified opportunities for more efficient use of water. It was prepared at a time when SEQ was in a protracted drought, and State government implemented legislation to conserve water use. The Government subsequently abolished The Queensland Water Commission and its permanent water conservation measures on 1 January 2013.

AAC encourages tenants to minimise use of potable water and to recycle water wherever possible.

Alex Fraser Group uses water from its detention basins for dust control, Veolia Environmental Services (Australia) Pty Ltd uses recycled water for dust management, and Q-Crete recycle water from its triple interceptor for its operations.

Water tanks are installed with new developments. Tenants are discouraged from hosing out hangars.

Electricity

The airport is connected to the Brisbane grid. Electricity is supplied directly to the airport substations, and the airport distributes the electricity to tenants on serviced sites.

AAC has also installed a 86kW solar electricity generation system on Building 111 in the Beatty precinct, providing renewable energy.

AAC is now investigating the feasibility of expanding roof top solar generation at Archerfield, with the objective of encouraging the progressive development of additional solar panel arrays on suitable sites at the airport.

AAC anticipates developing a solar strategy for the airport, once the feasibility investigations are completed, and priority actions confirmed.

16.9.3 Potential impacts

Efficient use of energy and water at Archerfield will become increasingly important in coming years.

Water scarcity is expected to be more prevalent due to climate change and increasing demand for water to serve population and economic growth in South East Queensland.

Energy usage will also become a significant issue, from the perspectives of cost, and carbon emissions in particular.

AAC is committed to securing the economic sustainability of the airport, and is working hard to attract additional enterprises and people to the site.

It recognises that water and energy consumption overall could increase due to:

- occupation of vacant leasehold premises, or connection of existing sites to the reticulated network;
- increased staff and visitor numbers on airport;
- construction activity; and/or
- increased production by tenants (particularly those with higher water usage requirements).

With growth in airport activity, the focus will be on achieving best practice efficiencies in water and energy use in new enterprises; use of renewable energy (including on site generation where feasible); and encouraging progressive improvements in existing AAC operations and tenancies.

Management of impacts

The management of water use includes:

- ongoing monitoring of consumption by AAC and tenants using the AAC metered supply, to identify opportunities for reductions;
- harvesting and reuse of water on site as a replacement (or supplement) for potable water (for suitable aviation and non aviation purposes); and

- use of water efficient fittings and appliances in AAC facilities and new developments.

As part of on-going improvements, the following water reduction initiatives have been identified:

- sub metering of tenancies with high water usage, to identify and address unaccounted for uses and possible leakages;
- use of water efficient fixtures with a minimum of 3 WELS stars at the airport; and
- a leak identification and monitoring program including repair of known leakages.

In addition, drought tolerant indigenous vegetation will be used where possible in new landscaping, to minimise the need for irrigation.

Improvements in recent years includes new landscaping work alongside the Grenier Drive entrance road and along Ditchmen Avenue in 2012. This included replacing existing undesirable vegetation with Tuckeroos. Upgraded and new landscaping has been provided at Hangars 1, 2, 3, 4, 5, 6 & 13; building 8; building 9; buildings 580 and 581 (in Transition Estate); and building 676, and several other sites in the Beaufighter precinct.

In anticipation of future drought conditions, AAC will prepare a *Drought Response Plan*, building on the initiatives taken in past periods of water restrictions.

A staged reduction in energy usage will be pursued, through initiatives such as:

- specifying energy efficient appliances and fittings (including lighting) in refurbishments and new developments;
- achieving energy efficiency in the siting, design, building fabric and specification of services for new development by AAC and tenants;
- at the planning stage of new developments investigating opportunities for on site generation of electricity from renewable sources; and
- encouraging tenants during environmental reviews to implement energy efficiency improvement strategies.

Improved efficiency in water and energy use will be pursued in new airport and commercial development.

16.9.4 Achievements 1998-2023

Use of natural resources and energy is considered in tenant assessments.

The airport has secured a number of recycling operations. These businesses promote the reuse of resources and reduce the energy used in producing these raw materials.

Water efficiency initiatives by AAC since the 2005/06 baseline year include:

- upgrade of all taps, showers, toilets and urinals at AAC owned buildings to more efficient fittings;
- installation of rainwater tanks; and
- upgrading of water meters.

Rainwater tanks have been installed for the QG Air complex on site 412, (for washdown for operational purposes), the corporate hangar development on site 411, and the new LifeFlight complex at site 409 in the Wirraway precinct; the warehouse and office on site 676 in the Beaufighter precinct; Hangars 4 and 13 and building 111 in the Beatty precinct; and buildings 560, 580 and 581 in Transition Estate, in the Boundary precinct.

Energy and water efficiency were key considerations in the refurbishment of the administrative offices in the historic Administration and Terminal building. Since completion, AAC energy consumption relating to administration and related activities has been reduced by almost half saving around 5000 kg of greenhouse gas emissions per annum.

Since commissioning the 86.6KW solar array at the Beatty precinct, AAC has produced energy that, had it not been from a renewable process, would have emitted the equivalent of 170,863kg of Carbon Dioxide (CO_2).

Energy requirements for airport operations have also been addressed. AAC has as part of Project AIM installed a new runway/taxiway lighting control system and replaced runway and taxiway lighting with LEDs which will result in on going energy savings.

16.9.5 Implementation targets for the 2023 AES

Use of natural resources and energy in AAC operations, and by tenants will continue to be monitored through the cyclical environmental review process.

Tenants will be encouraged to reduce natural resource and energy use, and initiatives will be recorded and reflected in management plans (as appropriate).

AAC will consider energy efficiency, water efficiency, and sustainable design when designing and specifying future projects or reviewing proposals by new or existing tenants.

AAC will review the current Water Efficiency Management Plan to ensure that it addresses contemporary requirements.

Opportunities for increasing the uptake of on site generation of electricity from renewable sources will continue to be investigated, and implemented where feasible.

AAC will seek to expand roof top solar generation at Archerfield, with the objective of encouraging the progressive development of additional solar panel arrays on suitable sites at the airport.

To further progress AACs sustainability objectives, AAC will:

- within the first two years of the AES, collect baseline data for a Sustainability Plan, focusing on Scope 1 and 2 emissions related to energy, water, and waste; and
- within three years, use this data to set sustainability targets, develop a plan, and establish annual reporting.

16.10 NOISE

16.10.1 Objectives

To minimise within the scope of AAC's responsibility ground based noise disturbance associated with airport operations.

16.10.2 Existing conditions

Aircraft noise

The major contributor of noise and vibration associated with airport operations is aircraft in flight.

Aircraft noise is modelled and mapped for each airport as an Australian Noise Exposure Forecast (ANEF). The ANEF shows the expected noise effects on land around the airport. It is reviewed and endorsed by AsA.

AAC in 2022 prepared an updated ANEF for Archerfield Airport that illustrates the noise modelled to 2042 (Figure 13). This ANEF was developed in consultation with AsA, BCC and the State Government and was endorsed in March 2023.

The Archerfield Airport ANEF identifies forecast noise impacts. It takes into account current standards, the projected aircraft movement patterns, likely aircraft mix, and maximum aircraft volumes forecast for the Airport Master Plan.

The approved ANEF provides useful information for planning decisions for land around the airport. It identifies areas that are not suitable for noise sensitive uses unless mitigating measures are implemented in the siting, design and construction of any buildings.

BCC and the State Government take the ANEF into account when they prepare the planning scheme for land around the airport, or consider development proposals near the airport.

Under the *Civil Aviation Act 1988* noise due to aircraft in flight, landing, taking off or taxiing is under the direct control of AsA. It is exempted from being the responsibility of the ALC under the *Airports (Environment Protection) Regulations 1997*.

Any complaints received concerning aircraft movements are immediately directed to the responsible officer at AsA.

Airservices manages complaints and enquiries about aircraft operations and its community engagement activities through the Noise Complaints and Information Service (NCIS). To contact the NCIS, visit:

https://www.airservicesaustralia.com/community/environment/aircraft-noise/about-making-a-complaint/

AAC works with AsA and aircraft operators on any aspects that involve AAC's areas of responsibility or interest.

AAC developed a *Fly Neighbourly* program in 2015, and this was reviewed and updated in 2021. AAC also works with AsA and aircraft operators to minimise the impact of aircraft on the community and on any aspects that involve AAC's areas of responsibility or interest.

Aircraft noise management is addressed in quarterly coordination meetings between AAC and AsA, and also on an as needed basis if an issue arises.

Other noise sources

Noise emitted from an airport (other than discussed above) may be caused by activities including:

- ground running of aircraft;
- operation of engine test cells;
- construction operations;
- noise from non-aviation activities; and
- road traffic movements.

These sound sources may affect the area immediately surrounding the airport.

16.10.3 Management of impacts

Within the scope of its responsibilities as airport operator, AAC engages with a range of stakeholders on management of aircraft noise emissions related to airport operations.

Current and proposed initiatives and procedures adopted by AAC relating to management of airport noise include:

- implementing the Archerfield 'Fly Neighbourly' program and code of conduct (first implemented in 2015, and updated following a review in 2021);
- educating aircraft operators and pilots through the airport Safety Management System;
- providing residents, other landholders and developers with information and advice about airport activities, and the management of noise impacts on the use or development of their land;
- meeting quarterly with AsA to identify and implement actions to optimise airport operations, including addressing noise management aspects;
- working with AsA to identify and implement solutions to any noise complaints, where these relate to AAC's areas of direct responsibility as airport operator;
- directing ground running aircraft and testing activities to appropriate locations to minimise potential impact on surrounding areas;
- monitoring and reviewing airport facilities with the view to minimising the noise impact on the community;
- ensuring if a significant issue arises, that appropriate consultation processes are put in place to resolve the issue; and
- working with BCC, Queensland State government and relevant government agencies to ensure that structures built near the airport have taken aircraft noise into consideration and that land in proximity to the airport is appropriately zoned, taking into account the aircraft noise patterns that are anticipated around the airport.

The 2042 ANEF includes in the 30 ANEF contour some industrial and residential properties in the vicinity of the eastern end of the 10L/28R runway.

The noise forecast assumes that a RPT service with 12 arrivals and 12 departures per day will operate at Archerfield, with half of the flights using Dash 8-Q400, and half using E175 aircraft, having a seating capacity of between 78 and 88 passengers.

In the event that a RPT service involving aircraft with greater than 40 passenger capacity and operating more than six arrivals and/or departures per day on the 10L/28R runway is proposed, AAC will:

- work with the operator to identify areas off airport that are likely to fall within a 30 ANEF contour based on the operator's proposed movements and taking into account other aircraft movements included in the endorsed ANEF for Archerfield Airport;

- work with the operator and AsA to identify any feasible measures to minimise aircraft noise within any resultant 30 ANEF contour extending east from the 10L/28R runway;
- engage with landholders within any resultant 30 ANEF contour in advance of the service commencing to confirm the measures that the RPT operator will implement to minimise the aircraft noise impacts of their operation (for example frequency and times of operations, or runway direction used); and
- ensure, through ongoing engagement with the operator and AsA (and BCC as appropriate, either through the PCF or by direct contact), that the noise management aspects of the RPT operation are implemented on an ongoing basis, and any issues are addressed in a timely manner.

The process that AAC will follow in planning and implementing a RPT service is discussed in section 18.12.2.

Noise levels due to ground based aircraft engine activities are minimised by restricting ground running and testing procedures to appropriate locations on the airport, distant from sensitive land uses.

Jet engine testing is only allowed at the run up bay to Runway 10L, and truck based dynamic engine test beds are directed to pad Tango. Evening or night time activities of this nature rarely occur.

AAC investigates any complaint due to the ground running of aircraft. The approach to this is addressed in the EMPs, and it is subject to monitoring for effectiveness, and periodic review.

AAC considers that its noise control strategy described above is suitable, and that noise monitoring or changes in noise management practices does not appear to be warranted.

If current circumstances change significantly then the need for monitoring and further controls will be reassessed and actions taken. Changes that would trigger further assessment could include proposals to commence a new 'noisy' process, or a significant increase in the frequency of ground based engine operation.

With respect to other potential noise sources, there has not been a significant history of complaints.

Since 1999, all new leases have included clauses relating to the environmental management obligations on tenants.

Under the current environmental management regime, tenants assessed as having the potential to generate nuisance noise are required to develop and implement a *Site Environmental Management Plan* (operations) to address

potential off site impacts. Implementation of these management plans is subject to ongoing surveillance and periodic review by AAC.

16.10.4 Achievements 1998-2023

Over the past 26 years all complaints relating to noise from ground running of aircraft have been addressed in accordance with AAC procedures.

Noise emissions from tenancies on airport are managed in accordance with the EMPs and any environmental management plan in place for their operation. Noise emissions are subject to surveillance by AAC, and are considered as part of the cyclical tenant reviews.

The Fly Neighbourly program, first introduced in 2015 has been has been recently reviewed and the updated program is being implemented.

Aircraft noise management is addressed in regular coordination meetings between AAC and AsA, and as required to address specific issues that arise on an operational basis.

16.10.5 Implementation targets for the 2023 AES

Airport safeguarding

Work with BCC and other relevant government agencies to ensure that land in the vicinity of the airport is appropriately zoned, used and developed taking into consideration current and forecast noise impacts from airport operations.

Assist neighbouring landholders with advice on anticipated noise from airport operations, and options for minimising potential aircraft noise impacts on the use or development of their land.

Work with BCC and other relevant government agencies to safeguard the continued operation of the airport, by ensuring that the proponent of any structure built near the airport incorporates appropriate measures to mitigate forecast aircraft noise exposure, having regard to the ANEF for Archerfield Airport, and the proposed use or development of their land.

Aircraft noise management

AAC established the *Archerfield Airport Fly Neighbourly Code of Conduct* in 2015 in direct response to community concern about aircraft noise impacts. The code was reviewed and updated in 2022 in consultation with stakeholders. This is a voluntary code which encourages operators to avoid noise sensitive areas where possible and is part of the flight training programs at the airport.

In addition to the 'Fly Neighbourly' program and code of conduct, the following processes and actions are long established, and will continue to be carried out over the life of the AES:

- providing guidance to aircraft operators and pilots, through the airport Safety Management System;
- directing ground running aircraft and testing activities to appropriate locations to minimise potential impact on surrounding areas;
- providing residents and other landholders with information and advice about airport activities, and the management of noise impacts on the use or development of their land;
- working with BCC, the State government and relevant government agencies to ensure that any changes in land use and development near the airport takes aircraft noise into consideration, and is based on the current ANEF;
- working with AsA to optimise airport operations, including noise management aspects;
- working with the proponent and with AsA at the planning stage of significant new aviation projects, to identify any potential aircraft noise implications and any feasible mitigation measures;
- meeting with AsA on a quarterly basis to discuss any aircraft noise management issues, and coordinate the implementation of any mitigation actions that involve AAC and AsA;
- working with AsA to identify and implement solutions to any noise complaints that relate to AAC's areas of direct responsibility as airport operator; and
- monitoring and reviewing airport facilities to minimise the noise impact on the community.

Management of aircraft noise exposure within the 30 ANEF contour

Prior to commencement of a RPT service using aircraft with capacity for more than 40 passengers involving more than six arrivals and/or six departures per day on the 10L/28R runway, AAC will:

- work with the operator to identify areas off airport that are likely to fall within a 30 ANEF contour based on the operator's proposed movements and taking into account other aircraft movements included in the endorsed ANEF for Archerfield Airport;
- work with the operator and AsA to identify any feasible measures to minimise aircraft noise within any resultant 30 ANEF contour extending east from the 10L/28R runway;
- engage with landholders within any resultant 30 ANEF contour in advance of the service commencing to confirm the measures that the RPT operator will implement to minimise the aircraft noise impacts of their operation (for example frequency and times of operations, or runway direction used); and