CANBERRA AIRPORT

Canberra Airport Construction Environmental Management Plan for Airside works

(EPBC 2008/4170 and EPBC 2009/4748)

3 February 2010

The Standard Construction Environmental Management Plan (CEMP) satisfactorily fulfils the requirements of the *Airport (Environment Protection) Regulations* 1997 and Environmental Management Systems: Guidelines (NSW Government, 1998), and is consistent with the aims and practices required under the Green Star Certification scheme.

Additional components were added to the CEMP to address conditions of approval for EPBC Act Referrals EPBC 2008/4170 and EPBC 2009/4748.

This CEMP for Airside works was approved by the Department of the Environment, Water, Heritage and the Arts on 3 February 2010, as a condition to EPBC Act Referrals EPBC 2008/4170 and EPBC 2009/4748.

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1. Introduction

1.1 Background

This Environmental Management Plan (CEMP) has been prepared for the design and construction phase of projects on Airport and addresses the environmental impacts for the proposed developments in terms of the *Airports (Environment Protection) Regulations 1997*, and the 2005 Canberra Airport Environment Strategy, approved 1 June 2005. This plan also satisfactorily fulfil the requirements of Environmental Management Systems: Guidelines (NSW Government, 1998), and is consistent with the aims and practices required under the Green Star Certification scheme.

This CEMP was approved by the Department of the Environment, Water, Heritage and the Arts on 3 February 2010, to meet the conditions to EPBC Act Referrals EPBC 2008/4170 and EPBC 2009/4748 for Airside works.

1.2 Purpose of the CEMP

The *Airports (Environment Protection) Regulations 1997* requires that all operators (including contractors) at the Airport take all reasonable and practicable measures to prevent pollution or if not reasonable or practicable, to minimise the generation of pollution.

The 2005 Canberra Airport Environmental Strategy, required under the *Airports Act 1996*, sets out the environmental management objectives of the airport. It identifies areas, which are environmentally significant, as well as measures to prevent, control or reduce environmental impact.

The Strategy was developed in the context of an Environmental Management System (EMS) consistent with the International Standard ISO 14001. This CEMP is consistent with the Environment Strategy.

The CEMP describes the proposed measures to be implemented to help achieve and maintain acceptable levels of environmental impact. When coupled with the individual site Erosion and Sediment Control Plan this CEMP becomes a site-specific plan developed to ensure that all contractors, sub-contractors, employees and site visitors comply with environmental requirements and that environmental risks are properly managed for the life of the project.

1.3 Structure of the CEMP

This CEMP comprises the following:

- Measures to incorporate environmental considerations into the construction of the proposed developments;
- Environmental management measures which will be implemented during construction; and
- Environmental management checklists to assist with monitoring the implementation of environmental management obligations during construction works.

This document, in conjunction with the project specific Erosion and Sediment Control Plan provided by the Airport and developed in consultation with the contractor, forms the basis of environmental management during the planning and construction of the project.

2. Project Description

2.1 Location and site layout

The location and site of the development are shown in the Erosion and Sediment Control Plan.

2.2 Summary of Environmental Issues

The following environmental issues are addressed in the Airport Environment Strategy and are discussed in terms of the proposed construction.

2.2.1 Air Quality

The two primary causes of air quality issues are emissions from construction machinery and airborne dust.

Airborne dust results from the excavation and stockpiling of soil as well as vehicle movement around the site. The earthworks contractor must undertake ground watering for dust suppression and place gravel on areas where large numbers of vehicle movements occur.

The Contractor must take appropriate precautions to minimise dust.

The Contractor will install filter fabric on any adjacent plant air intakes to minimise dust particles entering air conditioning systems if deemed necessary by the Airport.

2.2.2 Flora and fauna

Natural Temperate Grassland and Grassland Earless Dragon and Golden Sun Moth habitat are located Airside. Contractors are not to enter in these areas or commence work without the express approval of the Airport.

The Contractor will take appropriate precautions to minimise disturbance to surrounding grasslands.

Prior to works commencing, the Contractor will assist Canberra Airport in conducting the Preconstruction Protocol as set out in Appendix B.

The Contractor is to display pictures of the Grassland Earless Dragon, Golden Sun Moth or Striped Legless Lizard in the Contractors site shed and should cover the protection of listed threatened species during induction and regular toolbox meetings.

The Contractor is to provide a plan, for approval by Canberra Airport and the Airport Environment Officer, detailing fencing and signage of “no go areas” in areas of Natural Temperate Grassland and listed threatened species habitat.

Contractors have an obligation to report any listed threatened species, such as the Grassland Earless Dragon, Golden Sun Moth or Striped Legless Lizard, sighted to Canberra Airport immediately.

Natural temperate grassland has been assessed and mapped prior to construction and will be assessed after construction. Natural temperate grassland disturbed by construction, in the approved buffer areas, will be managed during construction and rehabilitated after construction to improve grassland quality.

Rehabilitation methods may include:

- Light spray of bitumen for dust mitigation (facilitates water penetration) and allowing the area to naturally regenerate using existing seed bank;

- Sowing natural temperate grassland and forb seed; and
- Translocation of grassland and forbs (otherwise destroyed by development).

All trees not to be removed from the site or adjacent verges are to be protected. Trees are to be fenced to protect them from damage from plant and equipment during the construction process.

2.2.3 Hazardous Goods

There is potential for relatively small quantities of hazardous goods to be used on site during construction. These goods will be managed as required by legislation.

2.2.4 Indigenous and Historic Heritage

The Airport lease was surveyed by Australian Archaeological Survey Consultants in 2001 in consultation with the three Ngunnawal groups. Artefacts were found on the Airport during this study, but none were found on the site of construction.

Contractors are to report any artefacts unearthed during construction works to Canberra Airport and the Airport Environment Officer.

2.2.5 Land Management

To assist in mitigating Bird Hazards, Canberra Airport has produced a re-seeding and soil stabilisation protocol as outlined below. Note that any reseeding airside of Natural Temperate Grasslands areas will be undertaken following appropriate consultations. Prior written permission is required from the Environment Manager and Operations Manager for any variations to the below protocol.

Airside
(Note: this also includes areas of Brindabella Park, Majura Park and Fairbairn adjacent to the airside fence.)

- Bitumen is to be used for all soil stabilisation.
- Reseeding to exclusively use Couch, Redleg and Fescue grass (or any combination thereof).

Landside

(Note: this excludes areas of Brindabella Park, Majura Park and Fairbairn adjacent to the airside fence)

- ACT Dryland Grass Mix to be used for reseeding of non-irrigated areas with bitumen stabilisation.

2.2.6 Natural Resources

Sustainable use of resources is a central theme of the Canberra Airport's development of the Airport. Energy saving measures will be utilised as far as economically and commercially possible through design and construction of the proposed development.

Water use is to be minimised as far as practicable and recycled or renewable materials is to be used where practical and economically viable.

Only Non-potable water is to be used for dust suppression and irrigation contractors are to comply with ACTEW Water Restrictions and to minimise water use where possible.

2.2.7 Noise

The likely noise producing activities arising from the development will include:

- Building and site construction activities; and
- Traffic noise generated by vehicles transporting materials and construction workforce to and from the site.

Noise generated from construction, maintenance and demolition of a building or other structure at the airport should not exceed 75dB (A), calculated at the site of a sensitive receptor, as defined in the *Airports (Environment Protection) Regulations 1997.*

Noise from operation of plant and machinery should not exceed background noise level at a sensitive receptor site:

- between the hours of 07:00 and 22:00 – by more than 5dB(A); and
- Between 22:00 hours of a day and 7:00 of the next day – by more than 3dB (A) (Schedule 4, Airports (Environment Protection) Regulations 1997.)

2.2.8 Hydrology and water quality

The Erosion and Sediment Control Plan will detail the use of silt fences, hay or straw bales and sediment retention ponds to prevent the flow of sediment into stormwater drains and where possible the removal of spoil to a dedicated stockpile within the Airport grounds.

The Contractor will provide a vehicle shake down area at the construction zone perimeter to minimise the accumulation of dirt and mud on the roads. Detergents will not be permitted in these areas.

If deemed necessary by the Airport, the Contractor will maintain the shakedown area to ensure that excessive build up of sediment does not impede the area's effectiveness.

During the construction phase, fuel and chemicals are not to be stored on site unless in an approved bunded area. If a spillage does occur during operations, cleanup methods will be employed which are appropriate for that instance as detailed in the Airports Standard Operating Procedures. The Canberra Airport Environment representative must be notified.

If stormwater accumulates on site, the Airport is to be contacted before the water is pumped to the stormwater system. An Airport representative will test the turbidity of the collected water and provide approval to pump the accumulated water if appropriate. No accumulated water is to be pumped to the stormwater system without the express approval of the Airport.

If ground water is encountered during construction, the Airport is to be contacted for testing before the water is pumped out and before any chemical treatment to settle turbidity. If possible, groundwater is to be collected and used for dust suppression and/or irrigation.

2.2.9 Soils quality

The potential impacts associated with soils on site during the construction phase relate to onsite earthworks and, as a result, possible erosion and movement of sediment offsite by either wind or water. Measures to control this will be outlined in the Erosion and Sediment Control Plan.

Soil testing is to occur as per 6.07 (c) and (d) of the *Airports (Environmental Protection) Regulations 1997.*

6.07 *Duty to assess soil conditions*
(c) The soil is an area of land that:

i. Is likely to have previously experienced some pollution; and

ii. Is subject to a sublease or licence that is about to expire or is proposed to be terminated or transferred; or

(d) The soil is in area of land that is affected by a proposed change of use, under a final master plan of the airport, of a kind described in subregualtion (2).

2.2.10 Waste management

The Environment Strategy commits to the ACT policy of 'No Waste by 2010'. This is achieved at the Airport by the application of the 'reduce, reuse and recycle' principle. Industrial waste generated during construction on the site may, where economically feasible, be sorted off-site for recycling. The *ACT Waste Minimisation Act 2001* and *Waste Minimisation Regulations 2001* will be applicable to the transport of all waste off Airport.

Soil and Water Legislation

The disposal of any contaminated soil or water from the site to lands outside the Canberra Airport is to be approved by the ACT EPA and be carried out in a manner consistent with the outlined under the *ACT Environment Protection Act 1997* and the *ACT Environmental Protection Regulation 2005*.

2.2.11 Heritage - for works in the Fairbairn Precinct

The Ex-RAAF Base Fairbairn is listed on the Register of National Estate (RNE) and a Heritage Management Plan (HMP) is being finalised for the Fairbairn Precinct.
Prior to any works or development undertaken within the Fairbairn Precinct, an assessment will be completed by Canberra Airport.

If no heritage significance is affected then works can continue along the usual process, however if any detrimental effect to the heritage significance is identified, a referral under the EPBC Act is required.

The Contractor will take all reasonable measures to ensure that heritage listed items are not damaged.

The Contractor will erect tree protection measures around any Heritage listed trees adjacent to the construction site.

3. Legislation and Statutory Obligations

The following legislation applies:

3.1 *Airports Act 1996*

Canberra Airport is principally subject to Commonwealth law. The key pieces of legislation controlling the operation of the airport are the *Airports Act 1996,* and the *Airports (Environment Protection) Regulations 1997* and the *Environment Protection and Biodiversity Act 1999*.

3.2 *Airports (Environment Protection) Regulations 1997*

The *Airports (Environment Protection) Regulations 1997* establish in conjunction with National Environment Protection Measures made under Section 14 of the *National Environment Protection Council Act 1994*, a Commonwealth system of regulation of and accountability for activities at airports that generate or have the potential to generate pollution or excessive noise. The Regulations also promote the improvement of environmental management practices for activities carried out at airport sites.

The Regulations set out provisions for potentially major sources of environmental impact including air, water and soil pollution and excessive noise. The Regulations deal with:

- Duties of operators of undertakings at airports;
- Local standards and individual authorisations;
- Monitoring, reporting and remedial action; and
- Enforcement.

The Regulations provide guidance for the formulation of this CEMP. Importantly, the Regulations require all operators (including contractors) at the airport to take all reasonable and practicable measures to prevent pollution or if not reasonable and practicable to minimise the generation of pollution from an undertaking. Compliance can be enforced under the Regulations.

3.3 *Environment Protection and Biodiversity Conservation Act 1999*

The *Environment Protection and Biodiversity Conservation Act 1999* (*EPBC Act*) provides protection to matters of national environmental significance which includes nationally threatened species and communities. In this regard, natural temperate grassland and associated endangered fauna species (including the Grassland Earless Dragon and the Golden Sun Moth) occurs airside.

Prior to any works commencing airside Canberra Airport will obtain, if required, the necessary environmental approvals under the EPBC Act.

3.4 Canberra Airport Master Plan

The approved 2009 Canberra Airport Master Plan addresses the issues set out in s71 (2) of the *Airports Act 1996*. This CEMP is consistent with the Master Plan.

3.5 Canberra Airport Environment Strategy

The Canberra Airport Environment Strategy (approved 1 June 2005) provides a framework for the environmental management of the Airport. This CEMP is consistent with the Environment Strategy.

4. Environmental management process and responsibilities

4.1 Construction

The Contractor will be responsible for the construction of the proposed development and associated infrastructure identified in Section 2 of this CEMP.

The Contractor is responsible for:

- Complying with this CEMP;
- Obtaining all licences and approvals under relevant legislation (with the exception of approvals under the EPBC Act) in consultation with Canberra Airport;
- Having regard to local procedures and best practices regardless of whether they directly apply at the Airport; and
- Where required a Temporary Traffic Management Plan (TTM) must be submitted to the appropriate authorities

Compliance Bonds
The individual contractual agreements made with all contractors and sub-contractors may contain specific compliance bond requirements (if necessary and relevant) and set forth the consequences for responsible parties in the case of non-compliance.

4.2 Approvals and Conditions

The Construction Contractor will submit the Erosion and Sediment Control Plan to the Airport for Review. If the Airport is satisfied with the Erosion and Sediment Control Plan for the Site it will be submitted to the Airport Environment Officer for endorsement. The endorsed Erosion and Sediment Control Plan, consent conditions and the CEMP must be adhered to during the construction of the development.

4.3 Review and update

A copy of the CEMP will be kept on site and should be easily obtainable at all times. If the CEMP needs to be updated the Contractor will submit a new Erosion and Sediment Control Plan to the Airport. If the Airport is satisfied with the updated Erosion and Sediment Control Plan it will submit the updated plan to the Airport Environment Officer for endorsement. In this instance, the old Erosion and Sediment Control Plan remains in force until the Airport Environment Officer endorses the updated version.

4.4 Reporting requirements

A dedicated file will be established by the Contractor for the development to contain all documentation pertaining to environmental management of the works.

During construction, the Contractor will undertake ongoing inspections of the works to identify non-compliance with the provisions of the CEMP.

The Contractor will complete the environmental checklists provided in Appendix A at a frequency agreed with the Airport, but no less than once per month.

The Contractor will provide monthly written reports to the Airport detailing the Contractor's compliance with the CEMP.

The Contractor will immediately inform the Airport of any non-compliances and it is the Contractor's responsibility to remedy all non-compliances. The Airport may impose restriction of construction activities until remedial action has been taken with regards to any environmental deficiencies.

4.5 Reporting requirements under the *Environment Protection and Biodiversity Act 1999*

In response to Referral EPBC 2009/4748, Canberra Airport is required to submit a report of performance against the requirements of the CEMP by 30 June each year for a period of 5 years. During construction the annual performance report will comprise of:

- Preconstruction checklist for the individual site (to be supplied electronically);
- Regular checklists for the individual site (to be supplied electronically);
- Photo diary, using point of references for the site adjacent to natural temperate grassland, prior to construction and during construction;
- A summary report of any non-conformances or complaints.

On the completion of the project annual photos using standard point of references will be taken to monitor weed dispersal, erosion and species diversification.

4.6 Complaints procedure

On-Airport noise complaint and environmental incident registers are in place at the Airport. The Contractor must immediately report to the Airport any complaints they receive, and the actions they take in response to these complaints.

4.7 Environmental emergency response procedures

An environmental incident is an unplanned event, such as an oil or chemical spill that occurs on site and causes significant adverse environmental impacts. The general response to an environmental incident shall be as follows:

1. Site Foreman – Institute a 'stop-work', ensure site safety, move people from the immediate area.
2. Site Foreman – Warn traffic of any hazard that may affect traffic using temporary lights, warning signs, etc.
3. Site Foreman – Take practical steps to contain the hazard and prevent it from spreading. Ensure that the Contractor's Works Site Manager is notified.
4. Contractor's Works Site Manager – Notify Canberra Airport's Representative and relevant authority. Liaise with relevant authority and clean up and remediate site.
5. Canberra Airport's Representative – Notify Canberra Airport's project manager. Ensure Contractor undertakes clean up in accordance with all statutory requirements.

Some potential environmental incidents and containment guidelines are discussed below. The Contractor shall arrange for appropriate containment equipment to be held at the site and the Site Foreman shall instruct staff in how to carry out emergency procedures.

Emergency Contacts

Accidents and Emergencies	Contact Telephone Number
ACT Fire Brigade	000
Aviation Rescue & Fire Fighting ARFF	02 6243 2199
Police	000
Ambulance	000
Canberra Hospital	02 6244 2222
ACT Work Cover	02 6205 0200

Pollution of a Waterway
This section discusses measures to be taken in the event of a spill of fuel, oil or any chemical into a waterway, or the uncontrolled release of dirty water from a water quality control structure or bunded area.

If possible, intercept the discharge before it enters the waterway with an earth bund or sock from a spill kit. Spread absorbent material form spill kit to soak up the spill. If discharge enters the waterway and mixes with water, isolate it with booms.

Cut Overhead or Underground Services
Secure and isolate problem area and notify the relevant utility authority.

Uncontrolled Fire
Follow the guidelines for using fire extinguishers (if very small fire).

In the event of a larger fire, contact the Fire Brigade. Take precautions to protect adjacent houses from fire (fill gutters with water, close windows and doors, etc.).

If vapour from the burning of toxic material is released into the air move people away from the area.

Utilities Contacts

Utilities	**Contact Telephone Numbers**
ActewAGL – Water	13 11 93
ActewAGL – Electricity	13 10 93
ActewAGL – Gas	13 19 09
Telstra	13 22 03

5. Environmental Issues

The following sections outline the key issues to be addressed during the construction phase.

5.1 Noise Management

Table 5.1 Noise Management Plan	
Element	Noise Management
Policy	To mitigate noise levels generated as a result of works activities in accordance with specified requirements.
Performance Criteria	The Contractor is to control noise levels such that minimal complaints are received from surrounding areas.
Implementation Strategy	• Noise generated from construction, maintenance or demolition of a building or other structure is not to exceed 75dB(A) for more than 10% of a period of at least 15 minutes at the site of a sensitive receptor, as defined in the *Airport's (Environment Protection) Regulations 1997*. • Operation of the site will be undertaken to meet the requirements of the regulations (particularly in relation to sensitive and commercial receptors) and the Environment Strategy. • Equipment and vehicles used during works are to be adequately maintained and serviced to ensure that noise levels associated with operation are as low as can be reasonably achieved.
Monitoring	Monitoring by the Contractor will include inspection of vehicle service records, monitoring of equipment operating noise levels and programming for appropriate time of day, and consideration of any complaints.
Reporting to CA	The Contractor will provide weekly comment on noise management issues, including details of any complaints from the public or regulatory authorities.
Corrective Action	If monitoring identifies practices which are inconsistent with best environmental practice, the Contractor will immediately take action to remedy the situation. Non-conformance notices and corrective action notices will be prepared and actioned. Monitoring of noise levels will be considered in consultation with the AEO.
Responsibility	Work Site Manager.
Timing	Throughout works implementation.

5.2 Air Quality and Dust Management

Table 5.2 Air Quality and Dust Management	
Element	Air Quality Management
Policy	Airborne dust and air pollution from excessive exhaust emissions from construction machinery and vehicles to be controlled within acceptable limits as defined in the Airport's (Environment Protection) Regulations 1997.
Performance Criteria	Air pollution, particularly dust, is to be controlled such that there is: • No interference with the safety of aircraft movements. • Minimal interference with the safe passage of adjacent vehicular traffic. • Minimal impact of airborne sediment on the community in general.
Implementation Strategy	• Air borne dust results from excavation, stockpiling of soil, high wind and vehicle movements around site – earthworks contractor is required to undertake ground watering using non-potable water for dust suppression and gravel to be placed on areas where large numbers of vehicle movements occur. • Construction traffic will be restricted to designated areas and tracks. • Dust control measures to be in place and enforced 24 hours per day throughout construction and landscaping periods. • Shakedown areas to be provided prior to entering major roads and loads to be covered where practicable. • If excessive exhaust fumes observed to be emitted for a period of ten seconds or more, vehicles will be requested to shutdown and undergo a maintenance check. • Contractors to submit evidence of vehicle servicing to ensure equipment is running efficiently and fumes are minimised.
Monitoring	Attention will be given to dust during works. If complaints are received, works will cease and additional dust suppression will be undertaken.
Reporting to CA	Weekly site report to include incidents of highly visible emissions of dust or smoke and complaints and remedial actions undertaken.
Corrective Action	If complaints are received, Contractor must immediately alleviate problem.
Responsibility	Works Site Manager.
Timing	Throughout works implementation.

5.3 Water Quality

Table 5.3 Water Quality Management	
Element	Water Quality Management
Policy	To minimise impacts on water quality resulting from construction works
Performance Criteria	• Development and adherence to Erosion and Sediment Control Plan and measures outlined in CEMP. • Absence of visible signs of water quality deterioration in water bodies affected by works and any chemical spills or waste that would be swept from the site via drainage lines. • Absence of sediment on road and in drains • Absence of third party complaints including Commonwealth and Territory Regulatory authorities.
Implementation Strategy	• Stockpiles of potential water pollutants i.e. oils, fuels, works materials, rubbish, suitably stored/bunded to minimise potential for contaminants to enter drainage lines. • No petroleum products to be stored on site, except for limited amounts of fuel for small plant usage if necessary. • Cleaning of equipment/vehicles to be undertaken in designated wash down area where untreated wash water is contained and does not enter stormwater drainage system • Stabilised access and shakedown grids to be established as detailed in Erosion and Sediment Control Plan. • A street sweeper or equivalent to be used when appropriate to remove accumulated dirt/mud from all roads. Do not wash into stormwater system. The Airport's Street sweeper is not to be used to remove the accumulation of dust/mud caused by Construction works. • At completion of works, area to be cleared of all potentially polluting materials • Employ best practice management to minimise potential for oil/diesel spills e.g. Bunding of temporary storage areas, no open top containers containing chemicals to be left in open, use of drip trays when decanting from large to small containers etc. • If maintenance of plant and machinery occurs on site, it is to be carried out in an approved area. • Any spills to be cleaned up and disposed of immediately. Canberra Airport Project Manager to be advised. • Any disposal of contaminated soil or water to be carried out in accordance with ACT Government requirements. • Works to be carried out in stages to restrict exposed areas susceptible to erosion. Initiate stabilisation of finished areas

	and formations as soon as possible to restrict further exposed areas. • Excess materials such as fill and topsoil to be stockpiled on site for future use and provided with erosion protection, after approval of location. Stockpiles to be stabilised if not used for four weeks or more. • Water sources for all construction activities to be approved by Superintendent's representative. • Canberra Airport Project Manager to be contacted if groundwater located during construction. • If possible groundwater is to be collected and used for dust suppressant and/or irrigation. • Express approval of Canberra Airport representative required before ponded water is released to the stormwater system. • Parking of machinery between work periods to be in designated areas only. Stabilised access to be established as detailed in the Erosion and Sediment Control Plan. • Adequate use of sediment pit-socks on street drainage when required. • Encourage workers to park on paved/hardstand areas. • Where possible retain grassed/vegetation strip to filter sediment. • Maintain all sediment control measures during construction and until full stabilisation. • Shake down grids should be checked and cleared out regularly. • Check stabilised entrances daily and prior to rain events.
Monitoring	Daily visual checks and weekly compliance checks (using Erosion and Sediment Control Checklist) to be conducted.
Reporting to CA	Incidents of chemical spills, visible pollution of watercourses and groundwater visibility. Checklist of erosion and sediment control measures to be reported monthly
Corrective Action	Rectification of non-conformance and non-conformance and corrective action notices to be prepared and actioned as soon as possible.
Responsibility	Works Site Manager
Timing	Throughout works implementation.

5.4 Erosion and Sediment Control

Table 5.4 Erosion and Sediment Control	
Element	Soil Erosion and Sediment Control
Policy	To minimise erosion and sedimentation during the works
Performance Criteria	• No signs of unacceptable erosion or sediment transport • Absence of water quality derteriation in water bodies affected by works and any chemical spills or waste that would be swept from the site via open swales and drainage lines. • Absence of third party complaints including Commonwealth and Territory Regulatory authorities.
Implementation Strategy	Before commencement of construction activities, the following measures will be incorporated where appropriate, to ensure minimal disturbance and adverse water quality impacts. • Sediment fences to be constructed along the downstream edges of the exposed construction area and at the base of any fill embankments. • Areas to be designated for plant and construction material storage. Runoff from these areas to be contained in case of spillage. • Catch drains to be used where possible at the downstream boundary of construction activities to ensure any sediment laden runoff is contained and not permitted to flow onto downstream undisturbed areas. Diversion banks and catch drains to be constructed along contours to minimise scour along the invert. • Sediment fences and sandbags to be placed along catch drains to slow flow, reduce scour and capture some coarse sediment from runoff. • Sufficient materials to protect against erosion to be available on site prior to construction commencing. • Education of site personnel in the location, inspection and maintenance of erosion and sediment control structures. During construction, sediment-laden runoff will be directed through erosion and sediment control structures prior to discharging into the stormwater system. Measures to mitigate water quality impacts during construction will include: • Progressive stabilisation of filled areas and filled batters • Construction activities to be confined to the necessary construction area • All construction traffic to use the specified access and exit points from the construction site. Regular inspection and maintenance to be undertaken for all sediment control works. Replacement of damaged equipment

	should occur immediately
Monitoring	Daily visual checks and weekly compliance checks to be conducted. Additional compliance checks to be conducted following rain events greater than 15 mm. The Airport will monitor water quality impacts through its Airport wide regular stormwater monitoring program.
Reporting to CA	Observations made during inspection of sediment and erosion control measures to be incorporated in Contractor's site report.
Corrective Action	Remedy practices that have allowed sediment generation and movement. If non-conformance is result of poor work practices, personnel to be advised of problem and informed of acceptable work practices.
Responsibility	Works Site Manager
Timing	Throughout works implementation.

5.5 Waste Management

Generally waste management relates to minimisation of waste generated, the utilisation of recycled materials, the recycling of waste materials and appropriate disposal of waste.

Table 5.5 Waste Management	
Element	Waste Management
Policy	To minimise waste generation at source
Performance Criteria	Waste generated as a result of works activities is located in designated areas of site awaiting appropriate disposal or, where economically feasible, recycling.
Implementation Strategy	• Designate specific areas on site for temporary management of various waste streams i.e. general domestic waste, works waste and contaminated waste. • Excess works material and solid material is to be separated where economically and commercially practicable and collected into wastes that can be recycled and the remaining waste disposed of at a legally operating landfill. • All domestic and industrial waste to be secured in proper industrial bins and covered to ensure rubbish is secure from wind and rain, and to ensure birds and vermin are not attracted to putrescible waste in uncovered containers. • Recycle waste oils. • Where practicable, use suppliers who have a working waste minimisation policy in place and assess quantities of materials required carefully to minimise surpluses and scrap. • Any disposal of contaminated soil or water to be carried off Airport in accordance with ACT Government requirements. • Trucks to be adequately covered when leaving site
Monitoring	Areas designated for waste storage to be inspected by Contractor as part of weekly works site inspection. Waste amounts to be recorded as they leave the site.
Reporting to CA	Observations and amounts when available to be incorporated in site report.
Corrective Action	If practices are inconsistent with environmental best practice, action must be undertaken to remedy the situation immediately. Non-conformance and corrective action notices to be prepared and actioned.
Responsibility	Works Site Manager
Timing	Throughout works implementation

5.6 Handling and Storage of Hazardous Materials

Given the nature of the works it is not anticipated that large quantities of chemicals will be used or stored on site. The most likely source of any chemical spill would be oil or diesel from plant and machinery. Provided that good handling and storage practices are employed on site the risk of contaminating the environment due to chemical spills is considered very low.

Table 5.6 Handling and Storage of Hazardous Materials	
Element	Handling and Storage of Hazardous Materials
Policy	To minimise, as far as reasonably practicable, the potential for adverse environmental impact due to handling or storage of hazardous goods.
Performance Criteria	Handling and storage of hazardous materials in accordance with ACT legislation and best management practice.
Implementation Strategy	• Establish a suitable dangerous goods storage area (in compliance with statutory regulations), including stores and waste chemical compounds. Prohibit open containers being left out in the open and use drip trays when decanting materials. • Establish temporary bunding for hazardous material storage during construction • All dangerous goods are to be stored in accordance with Dangerous Goods legislation. • Any waste oils to be collected and transported to recyclers or a designated disposal site as soon as possible. • Development of a spill control plan and education of workers in its provisions. This plan is to be readily available on site. • Any leakage or spills to be immediately contained and cleaned up to the satisfaction of the Project Manager • Contact Canberra Airport if spills are greater than 50L. • Written emergency and incident procedures to be communicated to all site personnel. • Current Material Safety Data Sheets (MSDS) for all chemicals on site to be readily available to site personnel with copy given to Superintendent's Representative upon request.
Monitoring	Ongoing visual inspection of handling and storage practices
Reporting to CA	Non-conformances with best practice handling and storage procedures will be noted in weekly site report along with actions to remedy situation.
Corrective Action	If practices are inconsistent with environmental best practice, action must be undertaken to remedy the situation immediately. Non-conformance and corrective action notices to be prepared and actioned.
Responsibility	Works Site Manager
Timing	Throughout works implementation

5.7 Staff and Subcontractor Training

Table 5.7 Staff and Subcontractor Training	
Element	Staff Training
Policy	All personnel involved in or visiting the works are aware of the CEMP and its objectives. Particularly those aspects relevant to the individual.
Performance Criteria	All personnel involved in or visiting the works to be aware of the CEMP and their responsibilities pursuant to the objectives.
Implementation Strategy	• Project/site induction is to include instruction on the CEMP and its requirements. Particular attention should be given to the specific actions required, responsibility and timings for each action. • Undertake all activities in accordance with the agreed plans of management, procedures and work methods. • Ensure that they are aware of the contact person regarding environmental matters. • Report any activity that has resulted, or has the potential to result, in an environmental incident. • Ensure that they attend the environmental training provided.
Monitoring	Regular inspection of activities carried out on site to identify compliance with the CEMP
Reporting to CA	The induction of personnel working on the works site to the CEMP will be noted in the Contractor's site report.
Corrective Action	Where individuals are identified as carrying out work in a manner contrary to the objectives of the CEMP, they will be apprised of the problems and given appropriate training in best practices to remedy the deficiency.
Responsibility	Works Site Manager
Timing	Prior to commencement of works and as required for new personnel

5.8 Threatened Species Management

Table 5.8 Threatened Species Management	
Element	Natural Temperate Grassland and threatened species management
Policy	To mitigate the loss and fragmentation of natural temperate grassland and potential habitat during construction.
Performance Criteria	Threatened species are to be managed such that: • The conditions of EPBC Act referrals are met. • Minimise disturbance to surrounding grassland. • Minimise weed dispersal • No loss in Grassland Earless Dragon individuals.
Implementation Strategy	• No works to commence without the express approval by the Airport • Preconstruction protocol to be followed prior to works commencing as set out in Appendix B • All work personnel will be briefed regarding the location of grassland and threatened listed species prior to works commencing • Regular toolbox meeting regarding threatened species to be undertaken as required • Photographs of Grassland Earless Dragon and Golden Sun Moth will be placed in the contractor work room • The designated area for work will (where applicable) have barriers around the extent of the site. • The designated work area will be clearly marked with no-go zones in areas adjacent to natural temperate grassland and associated habitat not affected by construction works • Areas of relevant grassland adjoining the works area, which will not be impacted by the works, are to be clearly marked to avoid vehicle damage and spillage of spoil. • Vehicle access lanes will be clearly defined by markers and access to the construction zone will be on existing gravelled paved surfaces or existing and former airside roads whenever possible. • All vehicles, plant and equipment must be contained within the work site at all times when parked. • All vehicles used by the contractor must have clean tyres to prevent weed seeds, spoil and other debris. • Vehicles must be washed where necessary before entering the site. • Minimise runoff from the construction site. • No fluffing or unnecessary disturbance of soil

	• No topsoil to be added on disturbed areas. • Maintenance of plant and machinery must occur outside the designated construction area. • No fill, topsoil or spoil to be stockpiled on or near grassland. • All wiring to be placed in conduits to minimise disturbance to grassland.
Monitoring	Daily visual checks and weekly compliance checks to be conducted. Additional compliance checks to be conducted when workings in areas adjacent to edge of construction site.
Reporting to CA	Observations made during inspections to be incorporated in Contractor's site report.
Corrective Action	If complaints are received, Contractor must immediately alleviate problem.
Responsibility	Works Site Manager.
Timing	Throughout works implementation.

5.9 Additional Requirements for fuel or other risk sites

Table 5.9 Fuel or other risk site management	
Element	Additional requirements for fuel or other sensitive sites
Policy	To minimise the risk of contamination and to monitor the site for fuel or other hazardous substances.
Performance Criteria	• Absence of contamination on site • The protection of groundwater monitoring well.
Implementation Strategy	Before commencement of construction activities, the following measures will be incorporated where appropriate, to ensure mitigation measures are in place to minimise contamination of the site. • Base line testing is also required to ascertain the condition of the site prior to construction • Minimum of three groundwater monitoring wells (including one well up gradient) to be installed prior to any works. • Baseline monitoring of the core and water samples to be undertaken in accordance with the *Airport (Environment Protection) Regulations 1997.* • All excavations for the tank, fuel lines etc to be tested to confirm status of condition. • Baseline monitoring of water samples after the installation of tanks and product and prior to operation of the facility • All groundwater monitoring wells to be protected during construction
Monitoring	• Canberra Airport will conduct regular monitoring of groundwater monitoring wells for contaminants of concern in accordance with Airport Environment Strategy (cost of monitoring to be forwarded to tenant) • Monitoring results to be compared to *Airport (Environment Protection) Regulations 1997*
Reporting to CA	Any incidents to be reported to Canberra Airport immediately
Corrective Action	If practices are inconsistent with best practice, action must be undertaken to remedy the situation immediately. Non-conformance and corrective action notices to be prepared and actioned.
Responsibility	Works Site Manager and tenant
Timing	Prior to works commencing and ongoing management of the site.

Appendix A Checklists

Control Measures	Applicable		Done/ Comment
Pre-Construction			
Staff Awareness			
Ensure that all employees are aware of their environmental responsibilities	Y	N	
Ensure that all subcontractors are aware of their environmental responsibilities	Y	N	
Site Planning			
Mark limits of work site, storage and accesses to minimise the ground area affected by road maintenance activity	Y	N	
Plan order of work to minimise period of exposure of disturbed ground to weather	Y	N	
Locate services (including water, sewerage, electricity etc)	Y	N	
Identify site placement for work materials and fuel storage	Y	N	
Set up secure storage for fuel, oil or other chemicals on site, and bunded around	Y	N	
Identify site placement for spoil, topsoil and waste (not under tree canopies)	Y	N	
Heritage/Archaeology/Flora and Fauna			
Locate sensitive areas and/or areas containing flora and fauna (e.g. particular trees) to be protected	Y	N	
Locate and remove noxious weeds	Y	N	
Install exclusion fences around trees and saplings to prevent damage from machinery or vehicles	Y	N	
Access and Traffic Management			
Prepare traffic control plan	Y	N	
Set up traffic controls	Y	N	
Arrange parking for construction plant and employee vehicles so that through traffic is not impeded.	Y	N	
Erosion and Sediment Controls			
Erosion/Sedimentation Plan approved by Airport Environment Officer	Y	N	
Identify drainage and slope to and from site	Y	N	
Correctly locate erosion control devices and structures, e.g., diversion drains, silt fences, hay bales, sandbags, detention basins	Y	N	
Deployment of sandbags, silt fencing etc to use if work is interrupted by rain	Y	N	
Is a concrete washout needed/installed?	Y	N	
Water Quality			
Provide spill kit, in case of fuel or chemical spills	Y	N	
Noise Control			
Check that mufflers on plant meet EPA requirements	Y	N	

Control Measures	Applicable		Done/ Comment
Install silencing devices or noise reducing barriers if necessary	Y	N	
Hazardous Substances			
Are hazardous substances (e.g. chemicals) being used?	Y	N	
Are appropriate environmental safeguards in place?	Y	N	
Waste Management and Disposal			
Identify wastes generated and method of disposal, including recycling where possible	Y	N	
Prepare Waste Management Plan as part of CEMP	Y	N	
During Construction – Weekly Checklist			
Heritage/Archaeology/Flora and Fauna			
Control or prevent spread of weeds	Y	N	
Monitor vehicles to ensure vehicles keep to designated tracks and roads	Y	N	
Check vehicle and plant tyres to minimise weed dispersal			
Works will cease in the event any heritage or archaeological items are discovered	Y	N	
Community Liaison			
Maintain a register of any complaints and detail the methods by which they were addressed	Y	N	
Access and Traffic Management			
Monitor traffic response to traffic controls and rectify any problems.	Y	N	
Erosion and Sediment Controls			
Correctly maintain erosion control devices for job duration	Y	N	
Soil Impacts			
Cover stockpiled soil and separate topsoil	Y	N	
Minimise compaction of topsoil due to use of heavy machinery	Y	N	
Air Quality			
Do not use plant which exceeds 10 sec continuous visible smoke from exhaust	Y	N	
Keep loose surfaces on site damp in windy weather	Y	N	
Dispose of excess spoil promptly or cover stockpiles	Y	N	
Cover truck trays when transporting dry material	Y	N	
Do not burn off waste materials	Y	N	
Noise Control			
Restrict construction noise levels by using plant responsibly	Y	N	
Notify neighbours if work outside normal hours of work is planned	Y	N	
Fire Control			
Ensure no cutting, welding or grinding on ‘fire ban’ days	Y	N	

Control Measures	Applicable		Done/ Comment
Keep flammable materials in clearly signed secure area	Y	N	
No open fires allowed	Y	N	
Hazardous Substances			
Maintain a register of all hazardous substances kept on site			
Waste Management and Disposal			
Maintain a Waste Management Register recording the type, quantity and location of waste reused, recycled, stockpiled and disposed of	Y	N	
Maintain worksite in clean, rubbish-free state	Y	N	
Inspect plant for fuel, oil or hydraulic fluid leaks. Repair leaks before using plant	Y	N	
Carry out any on-site refuelling and servicing within bunded area at least 20m from natural or built drainage lines.	Y	N	
Appropriately contain wastes stored on site	Y	N	
Dispose of waste in accordance with legal requirements, including treatment, if required	Y	N	
Ensure waste is transported securely	Y	N	
Post-Construction			
Rehabilitation of Site			
Ensure soil is made stable (especially when soil slopes)	Y	N	
Revegetate site in accordance with Landscape Plan	Y	N	
Remove soil and erosion controls after soil is made stable	Y	N	
Remove all waste materials or liquids from site	Y	N	
Remove site sheds and amenities	Y	N	
..... Site Foreman..... (date)			

Appendix B Preconstruction Protocol

Protocol for the investigation and retrieval of Grassland Earless Dragon

The following protocol was developed in consultation with Peter Robertson, Wildlife Profiles Pty Ltd and co-author of the Grassland Earless Dragon Recovery Plan and Alison Rowell, Qualified Ecologist on 9 November 2009 and will be followed, prior to any works, for the investigation and retrieval of potential Grassland Earless Dragon.

1. Fence off construction area and install sediment fencing to deter the movement of Grassland Earless Dragons into the construction area;
2. Closely mow the construction area and remove the thatch;
3. Investigate the area north of Taxiway Foxtrot for invertebrate holes;
4. Check any holes in the works area with a fibrescope for the Grassland Earless Dragon;
5. Once the holes are checked the holes are destroyed to deter Grassland Earless Dragons from re-entering the hole;
6. If found, the Grassland Earless Dragon is identified by photography, measure, sex and DNA if possible (DNA sampling to be undertaken by the University of Canberra who will obtain necessary permit to take and ethics approvals);
7. It is proposed to move the animals away from the works area and placed in an area of potential or actual habitat, preferably adjacent to the works area. The area will be decided upon by Alison Rowell and Peter Robertson;
8. The Grassland Earless Dragon individuals will be monitored by using a tracking device (to be undertaken by the University of Canberra);
9. Alternative burrows will be made by hammering a round stake or by drilling in the ground to a depth of 20cm– such a hole then has the characteristics of an invertebrate hole where the lizards are found at the Airport; and
10. Build upon the database recording each of the captured animal's characteristics including exact site location and relocation. This will allow for possible comparison of future monitoring and recaptures. Data will be shared with the University of Canberra, Grassland Earless Dragon Recovery Team, Department of the Environment Water, Resources, Heritage and the Arts and ACT Parks, Conservation and Lands (PCL).

Sediment and erosion control fencing will be installed to prevent Grassland Earless Dragons re-entering the work corridor during works.

Appendix C Existing Airside Roads