



Parliamentary Standing Committee on Public Works

REPORT

relating to the proposed

RAAF BASE TOWNSVILLE REDEVELOPMENT, STAGE 1

(Sixth Report of 1999)

THE PARLIAMENT OF THE COMMONWEALTH OF AUSTRALIA
1999

The Parliament of the Commonwealth of Australia

RAAF Base Townsville redevelopment, stage 1

Parliamentary Standing Committee on Public Works

2 September 1999
Canberra

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Membership of the Committee

(Thirty-Third Committee – appointed 8 December 1998)

Chair Hon Judi Moylan MP

Vice Chair Hon Janice Crosio MBE, MP

Members	Senate	House of Representatives
	Senator Paul Calvert	Mr John Forrest MP
	Senator Alan Ferguson	Mr Colin Hollis MP
	Senator Shane Murphy	Mr Peter Lindsay MP
		Mr Bernie Ripoll MP

Committee Secretariat

Secretary Mr Bjarne Nordin

Inquiry Secretary Ms Maria Grainger

Administrative Officer Mrs Angela Nagy



Extract from the votes and proceedings of the House of Representatives

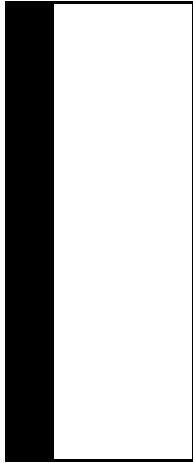
No. 33 dated Tuesday, 30 March 1999

**PUBLIC WORKS—PARLIAMENTARY STANDING COMMITTEE—
REFERENCE OF WORK—RAAF BASE TOWNSVILLE REDEVELOPMENT
STAGE 1, TOWNSVILLE**

Mr Slipper (Parliamentary Secretary to the Minister for Finance and Administration), pursuant to notice, moved—That, in accordance with the provisions of the Public Works Committee Act 1969, the following proposed work be referred to the Parliamentary Standing Committee on Public Works for consideration and report: RAAF Base Townsville Redevelopment Stage 1, Townsville.

Debate ensued.

Question—put and passed.



1. On 30 March 1999, the House of Representatives referred to the Parliamentary Standing Committee on Public Works for consideration and report the proposed RAAF Base Townsville Redevelopment, Stage 1.

The Reference

2. The terms of reference were as follows:

RAAF Base Townsville forms part of a chain of military airfields stretching across Northern Australia to Learmonth in the west. Together with RAAF Base Scherger, Townsville provides for the air defence of Northern Queensland and its approaches, as well as provides an air head for military air transportation operations and a base for fighter, strike and maritime and Army aviation operations. In many cases, the facilities need to be upgraded or replaced if the full operational and support capabilities assigned to the base are to be efficiently achieved and maintained and occupational health and safety standards met. Accordingly, a staged redevelopment of RAAF Base Townsville is proposed.

The main components of stage 1 comprise 10 fighter, strike and maritime patrol ordnance loading aprons, an operational and technical support facility for consolidation of vehicle and equipment maintenance functions, facilities for the Caribou replacement aircraft and an upgrade of base engineering services.

3. When referred to the Committee the estimated out turn cost of the proposal was \$70.1 million, with a further \$16.96 million identified for the capital equipment funded element.

The Committee's investigation

4. The Committee received a written submission from the Department of Defence (Defence) and took evidence from Defence officials at a public hearing held at the Townsville Council Chambers on 16 June 1999.
5. The Committee received written submissions and took evidence from representatives of the following organisations:
 - Townsville City Council; and
 - Australian Airports Limited.
6. Written submissions were also received from:
 - Sunfish Northern Queensland;
 - Australian Heritage Commission;
 - Environment Australia;
 - Department of Immigration and Multicultural Affairs; and
 - Royal Australian Institute of Architects.
7. Prior to the public hearing, the Committee was briefed by the Department of Defence and inspected existing facilities and sites proposed for the various works at the RAAF Base Townsville.
8. A list of witnesses who appeared at the public hearing is at APPENDIX A. The Committee's proceedings will be printed as Minutes of Evidence.

Background

Location

9. RAAF Base Townsville is located approximately 5 kilometres west of the Townsville city centre, within the suburb of Garbutt. It covers approximately 700 hectares of land, with a perimeter of 15 kilometres. The Base is bounded by the Bruce Highway and industrial/residential estates to the south, Australian Airports Limited and residential property to the east, Rowes Bay to the north-east, and the Townsville Town Common Conservation Park to the north and west.
10. The Base is owned by the Commonwealth, under the control of the Department of Defence. It is a joint user airfield, supporting both military and civil aircraft operations.

11. The Base's building and support facilities are separated into three distinct areas:
 - the main Base precinct along the southern boundary of the site, comprising operational support infrastructure, residential accommodation and recreational facilities;
 - the 5th Aviation Regiment (5 Avn Regt) precinct south of the 07/25 runway; and
 - operational support facilities such as explosive ordnance storage and preparation, air traffic control, Bureau of Meteorology and military working dogs north of the 07/25 runway.

Functions of the Base

12. RAAF Base Townsville was developed during the Second World War and many of the existing facilities have been only slightly modified since this period.
13. The Base forms part of a chain of military airfields across northern Australia to Learmonth in the west. It provides for the air defence of northern Queensland and its approaches. The Base's primary function is as a deployment base for combat aircraft during a contingency and as an air head for the 3rd Brigade's Ready Deployment Force (RDF) deploying from Townsville to an area of operations.
14. In peacetime, the Base supports the operations of:
 - No 35 Squadron (35SQN), which currently operates Caribou aircraft, to be replaced by Light Tactical Aircraft (LTA) in 2001;
 - 5 Avn Regt, whose fleet comprises Black Hawk and Chinook helicopters ;
 - deployed aircraft on exercise; and
 - other ADF units and capabilities.

The Defence policy environment

15. Australia's Strategic Policy (1997) establishes the future direction for Australian Defence planning. Australia's geography necessitates pro-active operations which focus on defeating attacks in our maritime and air approaches before they reach Australian territory. As one of the six airfields that create the umbrella of operational bases across Australia's north to address this contingency, RAAF Base Townsville will be retained in the longer term.

16. This proposal is consistent with the intent of the Defence Efficiency Review (DER) and Defence Reform Program. The DER identified Townsville as a long-term base. The Strategic Plan for the Defence Estate places significant emphasis on the rationalisation of facilities. It is anticipated that this will reduce operating costs and use new capital investment funds to best effect. The Redevelopment Stage 1 accords with this intent by proposing the consolidation of maintenance facilities and the closure of a fuel farm.
17. The RAAF Base Townsville Facilities Master Plan was approved in May 1998. It is based on RAAF Strategic Planning Guidance, which defines the roles and functions of the Base, and specifies the infrastructure needs to meet future Defence requirements. The Master Plan accounts for the Base's future strategic and operational needs. The siting of the proposed Redevelopment Stage 1 facilities accords with this plan. The existing operations are not to be compromised and the impact on the local environment is to be minimised.

Committee's Conclusion

18. **The continued usage and improvement of RAAF Base Townsville as part of Australia's northern air defence is appropriate.**
19. A number of other factors have shaped the layout of facilities at RAAF Base Townsville. They include:
 - functional requirements;
 - airfield planning criteria;
 - aircraft operational requirements (including civil use);
 - obstruction clearance requirements;
 - aircraft noise;
 - explosive ordnance facilities and activities;
 - security and ground and air defence of the Base; and
 - environmental considerations.

The proposal

20. The redevelopment aims to provide new operational facilities and upgrade or replace current Base facilities.

Ordnance Loading Apron Complex

The need

21. Fighter, Strike and Maritime Patrol aircraft are regularly deployed to RAAF Base Townsville for operational training. At present, there are limited ordnance loading facilities on the Base. Aircraft are loaded on licenced sections of the cross-runway, which is unacceptable for current and long term operational needs for a number of reasons:
 - the cross-runway is the preferred runway for General Aviation and commuter aircraft. When OLA activities are undertaken these aircraft are disrupted, which reduces the operational capability of the airfield;
 - the cross-runway is restricted to arming Fighter aircraft for training explosive ordnance loads only;
 - the concentrated in-line parking of the aircraft, as is presently necessary, is tactically unsound; and
 - the existing OLA arrangement restricts manoeuvring areas for refuelling tankers, making refuelling difficult and time consuming. There is no containment system for potential fuel spills and the cross-runway is of insufficient strength to support continuous refuelling operations by fully laden tankers.
22. Military aircraft employed in operational and training roles must be armed with explosive ordnance safely and efficiently. Purpose built Ordnance Loading Aprons (OLAs) will meet capability requirements and safety and operational needs, as well as enhancing the effectiveness of the deployed squadrons for both training and operations. They will allow the separation of military and civil aircraft operations, ensuring that both functions can be conducted concurrently.
23. The provision of dispersed, purpose-designed OLAs would eliminate the need to use the cross-runway for aircraft arming, and therefore overcome the associated operational deficiencies. Safety aspects associated with ordnance loading would be improved, especially with the provision of traverses and misfire barriers.
24. A Quick Reaction Alert Facility (QRAF) provides both shelter for aircraft, pilots and support personnel, and connections to communications,

engineering services and road infrastructure. There is currently no QRAF at Townsville, which compromises sustainment of alert times in the air defence role. A QRAF would enhance the operational effectiveness of the deployed units on the Base, allowing fighter aircraft to remain on alert for prolonged periods while providing rapid access to the runway.

The proposal

25. The spectacle configuration for the fighter/strike OLAs is consistent with other northern RAAF airfields. It incorporates ten standard Fighter/Strike OLAs including two QRAFs situated close to the main runway. Each apron will include an aircraft shelter, capable of accommodating two F/A-18s or one F-111, and an acoustic shelter with office and toilet facilities for deployed crew. A similarly provisioned Ready Room is proposed between the two QRAFs, to accommodate crews on alert.
26. Four new Maritime Patrol OLAs are proposed, each to accommodate one P3C aircraft. These would adjoin the fighter/strike OLAs. It is intended that one OLA double as an Explosive Ordnance Apron (EOA), for explosive ordnance loading/unloading activities by C130 aircraft. One OLA would include an aircraft shelter and each OLA would include an acoustic shelter.
27. Gun misfire barriers positioned at the front of each aircraft parking position protect against inadvertent misfires of forward firing ordnance. Earth embankment interceptor traverses are required at each Fighter/Strike apron to protect facilities within the complex and other parked aircraft from damage due to detonation of explosive ordnance.
28. Services to the shelters include lighting for general illumination, 50 Hz and 400 Hz power supplies, fire points, an alert/alarm system and fibre-optic communications cables for close circuit television, voice and monitoring.
29. Aircraft access and exit taxiways connect the aprons to the existing pavement network, with access roadways to facilitate the movement of ground support and service vehicles to and within the OLAs as required. Airfield lighting would be provided for all aircraft pavements.

Committee's Conclusions

30. **The provision of an improved Ordnance Loading Apron Complex is necessary to ensure that military aircraft can be armed with explosive ordnance safely and efficiently and that disruptions to the operations of general aviation and commuter aircraft are minimised.**

31. **A Quick Reaction Alert Facility (QRAF) will enhance the effectiveness of fighter aircraft by retaining them on alert for long periods and providing runway access.**

Fighter/Strike Operational and Technical Support Facility

The need

32. When operational squadrons are deployed to forward areas, they require a secure and protected facility from which their operations can be managed. These activities include mission preparation and briefing, and the coordination of maintenance activities. An Operational and Technical Support Facility (OPSTECH) is purpose built to satisfy these requirements.
33. At present there is no facility capable of satisfying all the required parameters for an OPSTECH at RAAF Base Townsville. A building in the main Base precinct is currently utilised for deployment operations. However, with the proposed new OLA Complex located at the north-west of the Base, the separation to the aircraft will be too great to allow for efficient operations management.

The proposal

34. A dedicated Fighter/Strike OPSTECH is proposed for the Base, immediately south of the OLA Complex. It would consist of separate buildings for operations and technical maintenance. Services within the buildings would include water, local emergency power supply, fire detection, emergency lighting and air conditioning. External services would include fibre-optic communications cabling links to vital assets, including the OLA Complex.

Light Tactical Aircraft Facilities

The need

35. 35SQN provides medium-range tactical air transport support, including all weather airdrop/airland of passengers and cargo for the Ready Deployment Force (RDF) and associated support for ADF units in Northern Australia. The unit maintains the capability to conduct search and survivor assistance operations. 35SQN is to be re-equipped with the LTA to replace the Caribou aircraft.
36. The LTA are scheduled to arrive in Townsville over 18 months beginning in early 2001. A full flight simulator is planned for installation in 2002. Townsville will accommodate up to twelve LTA. Hangarage for up to five aircraft will be required.

37. The existing 35SQN facilities at Townsville are inadequate for the current Caribou requirements. The situation will be exacerbated by the introduction of the LTA, due to a significant increase in the number of aircraft and personnel at Townsville. The existing 35SQN Headquarters has very limited space to accommodate the additional management and aircrew personnel necessary to man an LTA squadron. The Caribou field training section is currently based at Amberley and is managed by 38 Squadron (38SQN). The LTA field training requirement is expected to be integrated within 35SQN, but there is no suitable facility currently available for the unit.
38. A new facility is necessary for the LTA full flight simulator, as there is currently no flight simulator facility at Townsville. The Base currently does not house a flight simulator because none is available for Caribou. However, for any aircraft which Defence purchases in the future, a simulator will be purchased because this helps to reduce wear and tear on the actual aircraft, thus extending their lifespan.¹
39. The 35SQN hangar has a number of faults. It is extremely noisy, has no fire suppression system, incorporates substantial quantities of material containing asbestos, suffers from water leakage, has an uneven floor (creating a hazard when jacking aircraft), and can only accommodate two aircraft at a time. Additional ground support, deployment and maintenance equipment resulting from the increased capability and numbers of the LTA aircraft will necessitate additional storage space above that currently available to 35SQN.
40. The existing apron utilised by 35SQN is shared with Air Movements. When required, 35SQN relocate aircraft into their hangar or to another location to allow Air Movements to operate on the total apron. The current hardstandings are under considerable demand, and the increased numbers of LTA will necessitate provision of additional apron areas.

The proposal

41. Suitable facilities at Townsville to meet the operational and functional requirements associated with the 35SQN's LTA are proposed to replace the existing 35SQN Caribou infrastructure. Appendixes B-5 and B-6 show the proposed LTA facilities within the main Base precinct. Three hangars (two operational level maintenance and one deeper level maintenance) will be constructed under the Stage 1 Redevelopment, with an adjoining site identified for two additional hangars. The two operational level maintenance hangars would be separated by a flight line office, to provide unobstructed observation of the flight line. A technical maintenance area, located to the rear of the hangars, will consist of various workshops, storage areas, offices and amenities.
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¹ *Transcript of Evidence*, p. 48.

42. The existing parking apron (approximately 48,000m²) would be extended by 40,000m² to the north and east to provide aircraft parking and service points for eight LTA aircraft. The Base Liquid Dry Breathing Oxygen (LDBO) storage facility is currently situated in the area identified for the proposed apron extension. It would be relocated to the master planned hazardous goods area, immediately north of the 07/25 Runway.
43. The LTA Headquarters is planned as a separate building located behind the maintenance facilities. It would consist of a central administrative core and two wings of office suites (Appendix B-9). The central core would contain the orderly room, ground liaison section, operations room, planning room and briefing room. The first wing of office suites would accommodate the Squadron hierarchy, and the second would contain the offices of the Qualified Flying Instructors, as well as open plan office space for air crew to use as required.
44. The simulator would be housed in a two-storey building situated near the Headquarters building. It would consist of three functional areas:
 - simulator chamber;
 - workshop and simulator management facilities (ground floor); and
 - RAAF training and administration area (first floor).

Committee's Conclusion

45. **Due to the replacement of the Caribou aircraft with Light Tactical Aircraft, there is a need for additional space to accommodate the aircraft and increased personnel numbers. A Light Tactical Aircraft flight simulator facility is also necessary.**

Consolidated Vehicle and Battery Maintenance Facility

The need

46. No 323 Combat Support Squadron (323CSS) and No 1 Combat Logistics Squadron (1CLS) undertake mechanical repair, maintenance and servicing of motor vehicles and equipment. 323CSS supports ADF operations at RAAF Base Townsville, whilst 1CLS is a deployable unit, assisting organisations engaged in supporting forward air operations.
47. There are numerous deficiencies associated with the current maintenance facilities. Many of the buildings that originally served a different purpose display functional inadequacies such as insufficient storage areas, inadequate

security for parts and tools, insufficient work areas around vehicles and restrictive vehicle access. Several buildings are in positions which expose them to excessive aircraft noise and there is a lack of weather protection for personnel and equipment. Several buildings have insufficient insulation, cooling and ventilation and breach various Building Code of Australia (BCA), Occupational Health and Safety (OH&S) and Australian Standard principles.

The proposal

48. A consolidated maintenance facility is proposed to satisfy functional requirements, provide for efficient and adequate working environments, eliminate BCA and OH&S infringements, rationalise common functions and facilities, increase performance and meet current capacity requirements.
49. The proposed building layout is shown at Appendix B-11. To maximise vehicle and equipment accessibility, the complex consists of a central workshop/office core and two separate wings that house unit specific workshops and vehicle maintenance bays. The central core consists of functions identified as suitable for consolidation/common use, and includes welding bays, air conditioner and refrigeration equipment workshops, technical publication libraries, office areas and amenities. The surrounding vehicle compound has been designed to ensure sufficient manoeuvring ability for all vehicle types. A quarantine wash bay and automatic vehicle wash have been sited on the opposite side of the road that forms the southern boundary of the combined maintenance facility. Safe practice requires dedicated facilities for fuel tanker maintenance. Accordingly, fuel tanker maintenance and parking bays would also be located on the opposite side of the same road, near the wash facilities.

Committee's Conclusion

50. **A new consolidated vehicle and battery maintenance facility is needed and should overcome the deficiencies of the existing maintenance facilities and therefore improve performance and efficiency.**

Perimeter Road

The need

51. The base perimeter provides boundary access for emergency services vehicles (for example, fire tenders) and security patrols. It allows vehicles transporting explosive ordnance to travel away from Base vital assets.
52. The current perimeter road at RAAF Base Townsville comprises both bitumen and unsealed road surfaces. Some sections of the road are low lying

and subject to inundation by flood waters. The road is too narrow and weak to allow the new Trident fire vehicles to manoeuvre at any speed. Fire tenders currently use the taxiway parallel to the main runway to access the north-western areas of the Base due to the poor condition of the perimeter road in this area.

The proposal

53. The replacement of the existing perimeter road with a sealed all-weather surface of sufficient strength and width is proposed to address the deficiency.
54. Defence indicated to the Committee that the possibility of incorporating a levee bank into the perimeter road, which may take away the habitat for birds (discussed in greater detail in paragraph 1.98), will be examined during the design process.²

Committee's Conclusion

55. **A new perimeter road is necessary to provide a safe all-weather route for boundary access to the Base by emergency vehicles, security patrols and vehicles transporting explosive ordnance.**

Fuel Farm Closure

The need

56. Two types of aircraft fuel, AVTUR and AVGAS, are used at RAAF Base Townsville. Visiting and deployed aircraft provide the largest and most critical demand for Base aviation fuel. The Base has two fuel farms to store its fuel holdings for military aircraft. Fuel Farm 1 (FF1) is principally used for the storage of AVGAS which is required only for Caribou. Fuel Farm 2 (FF2) has sufficient AVTUR storage capacity for the medium and longer term requirements of the Base.
57. This proposal considers the closure of FF1 to reduce hazards and maintenance overheads currently associated with the facility. With the replacement of the Caribou aircraft, the storage of AVGAS at the Base will no longer be necessary. FF1 is a significant maintenance overhead, fails to comply with current safety legislation and standards and is a potential hazard to the local environment. Any fuel spill resulting from downloading or uplifting activities will enter the open unlined drain, which ultimately

² *Transcript of Evidence*, pp. 47-48.

flows into the Rowes Bay outfall. Also, FF1 is located in the master planned site for the proposed LTA facilities.

The proposal

58. The demolition of FF1 would include the removal of pipes and pumps, removal of the fuel tanks and remediation of the site as necessary. Testing would be conducted to determine the extent of contaminated soil, and remediation activities would be conducted in accordance with State regulations.

Committee's Conclusion

59. **Fuel Farm 1 is a potential hazard to the Base and the surrounding area, and attracts unnecessary maintenance overheads. Its closure is therefore appropriate.**

Engineering Services

Water

60. The Base is served by a network of water mains, providing water for domestic consumption and fire-fighting. Reticulation pipework breakages have been excessive in the past, leading to high maintenance costs, disruptions to operations, reduced fire fighting capacity, possible water damage to facilities and the cost of lost water through pipe joint leakages. The project proposes to address these deficiencies in part and extend the coverage of the water reticulation system to serve the new facilities. Further upgrading of Base water reticulation is proposed for a subsequent redevelopment project.

Sewerage

61. Base sewerage is treated at the Townsville City Council's Mt St John Waste Water Treatment Plant, adjoining the western boundary of the Base. A significant quantity of earthenware reticulation pipework, laid during the Second World War, now has fatigue problems. Expansion in Base personnel and facilities over recent years has not been supplemented by an increase in the capacity of the sewerage reticulation system, resulting in an increased load on the current system. The project proposes to partially upgrade the existing system, and extend the coverage of the sewerage reticulation system to serve the new facilities.

Stormwater

62. The topography of RAAF Base Townsville is generally flat with stormwater draining via networks of lined and unlined open drains and stormwater pipes. In significant storm events, flooding and ponding occurs at low lying zones within the airport precinct and adjacent to the Town Common Conservation Park. Upgraded and new stormwater infrastructure is required to ensure appropriate runoff quality, mitigate the impact of new development on flood levels within the Base boundary and adjoining properties, and ensure the works do not increase the attractiveness of the area to birds.
63. Defence advised the Committee that, although the Base does not have formal procedures in place for monitoring stormwater run-off, the Base Environmental Health Officer routinely collects stormwater samples from around the Base and forwards them to a laboratory approved by the National Association of Testing Authorities for analysis. Stormwater pollution controls are currently employed on the Base to ensure that contaminants do not enter the stormwater system. Such controls will also be part of the stormwater system constructed as part of the Redevelopment Stage 1.
64. In addition, the Defence Estate Organisation's Townsville Office is currently coordinating the development of a Base Environmental Management Plan which will detail a standard procedure for stormwater monitoring.

Grey Water

65. The Base grey water irrigation system uses treated effluent from the Mt St John Waste Water Treatment Plant. The grey water irrigation system provides substantial cost savings over the use of irrigation water from the domestic water supply system. Grey water costs about six per cent of the cost of bulk water from the domestic system.
66. There are reserve quantities of effluent available from the Mt St John Waste Water Treatment plant that could be utilised to serve the proposed developments and areas of the Base currently not covered. There is potential for the Townsville City Council and Australian Airports Limited to tap into the Base's irrigation main for their own irrigation purposes nearby. Defence has liaised with the Council about this issue. Council has recently finalised a study investigating the quality of treated effluent from the Mt St John plant for irrigation purposes, and methodology for possible cost sharing arrangements between the proposed recipients. The Committee was advised that Council endorsement of the study is anticipated shortly.

Electrical

67. Base high voltage and low voltage distribution network cables are approaching the end of their useful operational life. Proposed new works at the Base will place further demands on these services. The project proposes to upgrade the distribution system, and increase its capacity to accommodate the new facilities. Further upgrading of Base electrical system is proposed for a subsequent redevelopment project.

Communications

68. The combined factors of deterioration due to age and demand for communications for new facilities means that the Base communications infrastructure has little or no spare capacity. The project proposes to provide existing and new Base facilities with reliable trunk communications infrastructure that can effectively support telecommunications, fire, security, power monitoring and control and energy management communications.

Planning and Design

69. The planning of ADF airfields is based on the Five Nation Air Standards. International standards and recommended practices for civil aircraft also apply because RAAF Base Townsville is a joint user aerodrome.

Codes and standards

70. The design of new facilities would also conform to the relevant sections of the:
- Building Code of Australia (BCA);
 - Australian Standard 2021-1994, Acoustics - Aircraft Noise Intrusion – Building Siting and Construction;
 - Defence Manual of Fire Protection Engineering (MFPE);
 - Defence Security Manual (SECMAN series);
 - Defence Explosives Safety Manual (OPSMAN 3);
 - Manual of NATO Safety Principles for Storage of Military Ammunition and Explosives;
 - Defence Facilities Communications Cabling Standard;

- *Occupational Health and Safety Act, 1991;*
- *Environmental Protection Act 1974* and Regulations;
- *Queensland Workplace Health and Safety Act 1995* and Regulations; and other relevant current Australian standards and codes.

Fire Protection

71. The following principles have been adopted in respect of the design of the fire protection systems.
72. All construction and fire protection requirements will, as a minimum, accord with the provisions of the BCA, the Defence Manual of Fire Protection Engineering (MFPE) and all other applicable Codes and Standards. The levels of fire protection specified are above BCA requirements and have been determined by a risk assessment and risk management approach to fire protection.
73. Defence will require certification, from a suitably qualified certifier, that the design and construction meets the requirements of the BCA, MFPE, relevant Codes and Standards and any additional Local and State Government and Defence requirements.
74. The Queensland Fire Brigade will be invited to visit the site and comment on the project.
75. Any recommended departures from BCA requirements in relation to the project will be technically assessed by Defence specialist fire protection staff. Agreed departures (ensuring an equivalent or higher level of protection than BCA requirements) will require written approval at the Assistant Secretary level.
76. Successful tenderers will be required to produce a Quality Assurance Plan to clearly show how BCA, Australian Standards and any additional Defence requirements in relation to fire protection/fire safety will be met and maintained.

Energy Management and Lighting

77. The design of all power supply, electrical and mechanical equipment will include an assessment of energy use, applying life cycle costing techniques and power demand analysis. Facilities will incorporate building

management systems, metering and other provisions to measure energy use and to allow regular energy audits.

78. To reduce energy consumption and greenhouse gas emissions, where possible lighting will be controlled by photoelectric switches in conjunction with time switch schedules. This will include the provision of personnel sensor controlled lighting to intermittently occupied areas. Lamps will be high efficiency fluorescent, compact fluorescent or discharge type. External lighting will feature minimal glare and colour distortion. Where appropriate, time switches are to be installed at air conditioner controls to reduce running costs when premises are unoccupied. Solar hot water systems will be used where practical and cost effective. Consideration will be given to the control and monitoring of building services through a central energy management system.

Precautions against Legionella

79. As air cooled air conditioning systems are proposed, the Committee was informed that no specific precautions against the legionella bacillus are considered necessary. Potable water is supplied to the Base from the Townsville City reticulation. To ensure that this water does not exceed safe legionella levels, the Townsville City Council is obliged to maintain the necessary controls.

Design Features

80. The proposed OLA Complex will generally adopt the design practices used for similar facilities on other RAAF Bases. The following features would be incorporated:
- aircraft shelters would be open ended, but designed for the future fitting of doors if required. They would be of steel portal frame, metal clad construction;
 - interceptor traverses and gun misfire barriers located at each ordnance loading apron would be concrete faced earth embankments, sized to provide mutual protection of facilities within the complex and to restrict damage to external facilities in the unlikely event of mishap;
 - acoustic shelters and the Ready Room would be of steel frame, metal clad construction, incorporating wall, ceiling and floor insulation, acoustic seals around openings, and double glazed windows;

- taxiways would be constructed as flexible pavements surfaced with bituminous concrete. Aprons would be constructed as rigid pavements; and
 - the Base perimeter road and OLA access roads would be constructed as flexible pavements surfaced with bituminous concrete.
81. Similar to the facility recently constructed at RAAF Base Darwin, the OPSTECH would be an earth-covered concrete-arch construction designed to withstand a pre-determined blast load. Concrete end walls would incorporate external blast doors, and entrance passageways would be of revetted, angular design. Internal partitions would be of masonry or sandwich panel construction.
82. The Consolidated Vehicle and Battery Maintenance Facility would be founded on a concrete raft footing. Servicing bays and workshops would be of portal frame, metal clad construction. The office complex would be of single level, concrete block design.
83. The LTA aircraft hangars and maintenance facilities would be of portal framed metal clad construction. The hangars would be separated by 90 minute fire rated walls. A single level headquarters building and double storey simulator building would each be of concrete block construction, founded on a concrete raft footing.

Environmental and heritage issues

84. An Environmental Impact Assessment (EIA) for the Redevelopment Stage 1 has been undertaken under the guidance of the Memorandum of Understanding (MOU) between Defence and the Department of Environment and Heritage. The findings of the EIA, conducted in two stages, have led to a determination that there will be no significant environmental impact resulting from the proposed Redevelopment Stage 1.
85. Consistent with the MOU, Defence will record the EIA process, determinations and environmental safeguarding measures in an Environmental Certificate of Compliance, based on the findings of the EIA. The Committee was advised that, under the *Commonwealth Environmental Protection (Impact of Proposals) Act 1974*, Commonwealth departments are permitted to undertake the relevant studies and, if they determine that there are no significant environmental issues, may issue their own Certificate of Compliance.³

86. Concurrent with the EIA process, substantial consultation was undertaken with special interest groups and environmental agencies to assist in determining the environmental issues associated with the proposed project. An Environmental Management Plan for the Stage 1 Redevelopment construction activities is to be developed and approved before construction commences.

Register of National Estate Listing

87. Wetlands systems within the Base and the neighbouring Town Common Conservation Park are listed on the Register of the National Estate (RNE) in recognition of their biodiversity values. Included in the consultation process was a referral of the project to the Australian Heritage Commission (AHC) under Section 30 of the *Australian Heritage Commission Act 1975*. The Act requires that application be made to the AHC in relation to proposals that potentially impact on areas listed on the Register of the National Estate, or other areas with significant heritage values. The AHC raised a number of issues in their submission to this inquiry, which are addressed below.

The Borrow Pits

88. The construction of the OLA Complex will necessitate the filling of the Borrow Pits. This artificial habitat was created from the accumulation of water into two large excavations which provided pavement material for the construction of the original airfield. The Borrow Pits are the last permanent freshwater habitat in the Townsville Town Common Area.⁴ Although not listed on the RNE, they support the RNE listed areas as the last remaining permanent water source in times of drought.
89. The AHC has expressed concern that the proposed project is likely to have an adverse effect on the RNE listed areas, because of the loss of the permanent water if an alternate habitat is not provided. However, Defence advised the Committee that this concern will be addressed by providing a suitable alternative habitat.
90. Defence has committed to funding the provision of equivalent replacement habitat with similar water retaining characteristics elsewhere on the Town Common. A working group has been established, and the process of finalising the compensatory habitat is underway⁵. The Working Group, chaired by the Queensland Parks and Wildlife Service, first convened in April 1999. It considered approximately five options for the provision of the alternate habitat. The Working Group agreed that a consultant would be

4 Australian Heritage Commission, *Submission*, Attachment B.

5 A list of organisations invited to participate in the working group is on page XXXX.

engaged to draft a Terms of Reference for the investigation of these options. In the main, the options lie in the Town Common, and would require a Section 30 referral to the AHC as part of the approval process. Defence has also agreed to undertake a fish rescue from the existing Borrow Pits, supervised by the Department of Primary Industries and Sunfish NQ.

91. In their submission to the inquiry Sunfish NQ, representing the region's recreational fishers, raised some concerns about the Borrow Pits, which have been an important part of the area's fishery values for almost fifty years.⁶ Sunfish cautioned that the replacement wetlands need to be at least equivalent, in terms of habitat values, to the existing Borrow Pits. Also, the design of the wetlands needs to include gross pollutant traps and settling ponds, to reduce risk of 'first flush' pollution during early wet season rains. Sunfish cautioned that the disturbance of acidic or hydric soils could have offsite impacts on habitat well away from the disputed area and this also needs to be examined and countered.
92. As a result of the filling of the Borrow Pits, stormwater run-off into the downstream wetlands area is expected to increase, particularly during dry season months when flows would normally be contained within the Pits. It is anticipated that this will provide some compensation for reduced flows imposed by upstream works over the years. Sunfish NQ⁷ advised the Committee that stormwater runoff may release gross pollutants and other contaminants, such as residual poisons or cleaning agents. However, Defence claims that any impact on the wetlands from stormwater run-off is expected to be negligible, as the Borrow Pits catchment represents only approximately three per cent of the total catchment area. Stormwater monitoring is dealt with in greater detail above at paragraph 1.62.
93. With the exception of the filling of the Borrow Pits and the establishment of a compensatory habitat, no modification of existing habitat within the Town Common Conservation Park is proposed.

Committee's Conclusion

94. **The Department of Defence has undertaken adequate consultative processes in relation to the Borrow Pits. The replacement habitat should provide a suitable alternative habitat for the flora and fauna which currently resides in the Borrow Pits.**

⁶ Sunfish NQ, *Submission*, pp. 1-2.

⁷ Sunfish NQ, *Submission*, p. 1.

Committee's Recommendation

95. **The Committee recommends that the development of the Borrow Pit replacement habitat continue to involve consultation between the Department of Defence and the relevant authorities and interest groups, to ensure that a suitable replacement habitat is provided.**

Flora and Fauna

96. Flora and fauna surveys show that the terrestrial habitat in the area of the proposed project site is generally of poor quality because of the dominance of introduced species. No rare or threatened species or areas of critical habitat were encountered during field investigations conducted as part of the EIA development.
97. The Australian Heritage Commission's assessment of the proposal found that it was likely to impact adversely on the national estate values of the area, and recommended measures to ameliorate this impact. The AHC have stated that the Town Common Conservation Park is recorded as a known habitat of a reptile species listed in the Commonwealth's *Endangered Species Protection Act 1992*, but the investigations and field surveys conducted as part of the EIA have not revealed the presence of this species.⁸ The AHC has advised the Committee that it is satisfied that Defence's commitment to minimise the impact has adequately addressed the Commission's concerns.⁹

Bird strikes

98. The major fauna issue identified during the preparation of the EIA relates to bird hazard and bird habitat management. During the wet season, the airport environs attracts large numbers of Magpie Geese and other water birds. The wetlands adjacent to the Base and the extensive areas of maintained grassland within the airport support large populations of birds. Consequently, the airport has the highest rate of bird strike in Australia.
99. Australian Airports Limited advised the Committee that bird strikes at the airport have increased over the past two years as a result of major change in the weather patterns. During this period, both major airlines and some light aircraft have experienced bird strikes which have damaged their aircraft.¹⁰ In cases overseas, bird strikes have caused aircraft to crash. Some claims have been made that the major airlines may not continue to fly to Townsville if the bird strike issue is not resolved.

8 Australian Heritage Commission, *Submission*, p.1.

9 Australian Heritage Commission, *Submission*, p.2.

10 Australian Airports Limited, *Submission*, p.2.

100. While resolution of the bird strike problem associated with the adjacent wetlands extends well beyond the influence of the Stage 1 works, it is not anticipated that the works would exacerbate the problem. Indeed, the filling of the Borrow Pits may help to reduce the number of birds in the area. A Bird Hazard Management Committee, comprising representatives of organisations including AAL, RAAF, QANTAS Airways and Ansett Australia, has been established to develop strategies to reduce the incidence of bird strike at the airport. Defence advised that a separate new work is being progressed to expeditiously address the bird strike problem.¹¹ This will probably involve some filling of low lying areas immediately adjacent to the runways and the provision of additional drains, but a detailed study to define the scope of the works is currently only in the developmental stages. AAL suggested to the Committee that this work should be completed before the beginning of the next wet season (December, 1999) to alleviate the bird strike problem as quickly as possible.¹²
101. There is some dispute over who should bear financial responsibility for the alleviation of the bird strike problem. Defence indicated to the Committee that the major airlines believe that Defence, as the land lord of the property, is responsible for dealing with the problem. The *Townsville Airport Joint User Deed* (9 June 1998) states that 'Defence is responsible for carrying out Defence works and it must pay for the cost of those Defence works.' However, the Committee believes that reducing the bird strike hazard is a shared responsibility and that there should be more cooperation from lessees and other users of the airport.

Soils

102. Because it is near the coast, the Base may include acid sulphate soils, but they were not detected by preliminary field tests. The redevelopment will require site filling. Therefore, although proper procedures would be implemented for the handling and disposal of excavated acid sulphate soils, in this case it is not expected to be a significant issue.

Historical cultural heritage

103. As part of the EIA process, an assessment of the heritage significance of Base infrastructure was conducted. No buildings of heritage significance are planned for demolition as part of the Redevelopment Stage 1. However, given that this is likely to be an issue for subsequent Base redevelopment work, ongoing consultation with the AHC is occurring.

11 Department of Defence, Submission, pp.24-25.

12 Australian Airports Limited, *Submission*, p.5.

Indigenous cultural heritage

104. An assessment of indigenous cultural heritage values in the vicinity of the proposed works was undertaken. This included consultation with traditional owners from the area. No specific cultural heritage sites or places were identified. Ongoing consultation with indigenous communities will occur throughout the project to ensure the safeguarding of indigenous heritage values which may be subsequently discovered. This requirement will be included in the construction Environmental Management Plan (EMP).

Operational environmental issues

105. A number of environmental issues associated with ongoing Base operations, such as insect control, ground contaminants and bird strikes, will be the subject of discussion and resolution between Defence and relevant stakeholders, including the AHC. These issues will be addressed in the Base EMP.

Committee's Conclusion

106. **The Committee is satisfied that the Department of Defence appears to have undertaken sufficient consultation with the relevant authorities and interest groups in the consideration of environmental and heritage issues associated with the redevelopment.**

Property considerations

107. Facilities associated with the OLA Complex extend into the Town Common Conservation Park. Defence is currently negotiating the purchase of the additional land with the Department of Natural Resources and the Townsville City Council. The extent of land required is displayed at Appendix B-3. This is determined by the explosive ordnance safety distance requirements to exclude the public from the immediate area surrounding the OLA Complex.

108. In purchasing this portion of land, Defence will provide funding to facilitate:

- realignment of a public access road to the Town Common Conservation Park; and
- development of a habitat area to replace the Borrow Pits habitat.

Consultation

109. A Community Involvement Program (CIP) was developed in response to the recognised need for community consultation as part of the EIA process. The CIP aimed to capture and take into account the views of stakeholders, including the general community, special interest groups and regulatory authorities about environmental issues associated with the project proposal. The CIP established contact with key stakeholder groups, and sought their attendance at periodic Environmental Focus Workshops. Through the print media, the general community was also invited to participate in the CIP. A 24 hour free-call telephone hotline was established to receive community comments.

110. Representatives from the following organisations were invited to attend the series of Environmental Focus Workshops:

- Department of Natural Resources;
- Department of Environment and Heritage;
- Department of Primary Industry;
- Department of Family Youth and Community Care Services, Office of the Aboriginal and Torres Strait Islander Affairs;
- Department of Local Government and Planning;
- Australian Heritage Commission;
- Australian Airports Limited;
- Queensland Parks and Wildlife Service;
- National Trust of Queensland;
- Wildlife Preservation Society of Queensland;
- Townsville City Council;
- Thuringowa City Council;
- Townsville Bird Observers;
- Ross Island Volunteers for Estuarine Research (RIVER);
- Sunfish North Queensland;
- Bindal Clan Reference Group Of Birri Gubba;
- Wulgurukaba Aboriginal Corporation; and
- Galaburra Reference Group.

111. Defence has indicated that attendees conveyed in-principle support for the proposed Redevelopment Stage 1 works.
112. As an outcome of the workshops, all attendees were invited to participate in the working group addressing in detail the provision of the compensatory habitat to replace the Borrow Pits. (This is discussed in greater detail in paragraph 1.88.)
113. Environment Australia has been consulted during the EIA process and preparation of the Section 30 referral. Discussions have also been held with various planning, engineering and environmental representatives within the Townsville City Council in relation to the project.

Personnel numbers

114. Base manning levels will not be altered by the addition of the OLA Complex and OPSTECH to the Base infrastructure, as these facilities support deployed squadron operations. A manpower saving of three personnel would result from the proposed consolidation of Base maintenance functions. The current 35SQN establishment of 85 personnel is expected to increase to 148 with the introduction of the LTA.
115. Over the expected construction period of about two years, an average of about 160 personnel would be directly employed on construction activities. In addition, it is anticipated that construction will generate further job opportunities off-site through the prefabrication of components, and the manufacture and distribution of materials.

Cost and Program

116. The estimated cost of the project is \$95 million (with some further indexation of the LTA funded elements yet to occur). However, the approved budget figure is \$87.05 million. The budget amount includes the design and construction costs, other professional fees and charges, furniture and fittings, contingency and a predicted indexation adjustment over the design and construction. Defence indicated to the Committee that attempts will be made to make some savings throughout the project, allowing funding of the full scope of the works outlined above.¹³ However, the budgetary restraints may

13 Transcript of Evidence, p.63.

result in some lower priority elements of the project being moved to a subsequent stage.

117. Subject to Parliamentary approval, the project is planned to be committed in late 1999. The intention is to have all facilities associated with LTA completed before the anticipated arrival of the first aircraft in early 2001, and the remainder of the works completed by December 2001.

Other Works at RAAF Base Townsville

Future Projects

118. Design and documentation is in progress for the Lavarack Barracks Redevelopment Stage 2, with construction planned to commence in October 1999. These works were the subject of the PWC's Third Report for 1999. A Stage 3 proposal for Lavarack Barracks is currently being developed and will be subject to PWC examination.
119. A Stage 2 Redevelopment proposal is also currently in development. These works would be the subject of PWC examination, and may include:
- a purpose built air movements and cargo hangar facility;
 - a new physical fitness centre, swimming pool, and multi-purpose playing field;
 - a new Base Headquarter complex;
 - a new Ground Defence Facility incorporating Defence Section, Photographic Section and Security Police;
 - a new Chapel and Community Services facility;
 - upgraded Base Radio Facility;
 - refurbishment of existing Combat Survival Training School facilities;
 - a new Base entrance; and
 - new 27SQN and Air Training Corps facilities.

Accommodation

120. The provision of living in accommodation to meet RAAF Base Townsville's requirements is currently being examined. There is a large requirement for accommodation for operations and exercises. The Committee received conflicting evidence on the availability of accommodation in Townsville for

people living off-base. Defence representatives informed the Committee that their anecdotal evidence is that accommodation is not readily available,¹⁴ but the Townsville Deputy Mayor stated to the Committee that Townsville and nearby Thuringowa are currently experiencing record residential building and that Townsville offers a wide range of rental accommodation.¹⁵ The Committee was advised that a number of broader Defence policy issues in relation to accommodation are under review.

Committee's Recommendation

- 121. The Committee recommends the construction of RAAF BASE Townsville Redevelopment Stage 1, at an out turn cost of \$87.05 million.**

Conclusions and recommendations

- 122.** The conclusions and recommendations of the Committee and the paragraphs in the report to which they refer are set out below.

The continued usage and improvement of RAAF Base Townsville as part of Australia's northern air defence is appropriate. (paragraph 18)

The provision of an improved Ordnance Loading Apron Complex is necessary to ensure that military aircraft can be armed with explosive ordnance safely and efficiently and that disruptions to the operations of general aviation and commuter aircraft are minimised. (paragraph 30)

A Quick Reaction Alert Facility (QRAF) will enhance the effectiveness of fighter aircraft by retaining them on alert for long periods and providing runway access. (paragraph 31)

Due to the replacement of the Caribou aircraft with Light Tactical Aircraft, there is a need for additional space to accommodate the aircraft and increased personnel numbers. A Light Tactical Aircraft flight simulator facility is also necessary. (paragraph 45)

A new consolidated vehicle and battery maintenance facility is needed and should overcome the deficiencies of the existing maintenance facilities and therefore improve performance and efficiency. (paragraph 50)

¹⁴ *Transcript of Evidence*, p. 50.

¹⁵ *Transcript of Evidence*, pp. 69-70.

A new perimeter road is necessary to provide a safe all-weather route for boundary access to the Base by emergency vehicles, security patrols and vehicles transporting explosive ordnance. (paragraph 55)

Fuel Farm 1 is a potential hazard to the Base and the surrounding area, and attracts unnecessary maintenance overheads. Its closure is therefore appropriate. (paragraph 59)

The Department of Defence has undertaken adequate consultative processes in relation to the Borrow Pits. The replacement habitat should provide a suitable alternative habitat for the flora and fauna which currently resides in the Borrow Pits. (paragraph 94)

The Committee recommends that the development of the Borrow Pit replacement habitat continue to involve consultation between the Department of Defence and the relevant authorities and interest groups, to ensure that a suitable replacement habitat is provided. (paragraph 95)

The Committee is satisfied that the Department of Defence appears to have undertaken sufficient consultation with the relevant authorities and interest groups in the consideration of environmental and heritage issues associated with the redevelopment. (paragraph 106)

The Committee recommends the construction of RAAF BASE Townsville Redevelopment Stage 1, at an out turn cost of \$87.05 million. (paragraph 121)

Hon. Judi Moylan MP

Chair

2 September 1999



Appendix A – Witnesses

Department of Defence

Brigadier Garry Kelly, Director General, Program Delivery

Air Commodore Norman Grey, Director General, Aerospace Development

Wing Commander Allan Nicholson, Project Director

Wing Commander Christopher McHugh, Officer Commanding Combat Support Force – Townsville

Mr Graham Moss, National Airports Technical Manager, Gutteridge Haskins and Davey Pty Ltd

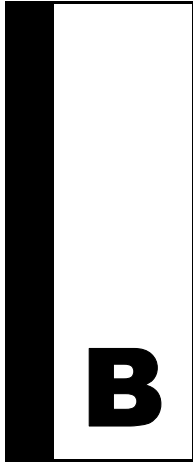
Townsville City Council

Councillor Ann Bunnell, Deputy Mayor and Chief of Environmental Services Committee

Australian Airports Limited

Ms Catherine Rule, Chief Executive Officer

Mr Ronald Lores, Operations and Technical Manager



Appendix B – Plans and elevations

Location plan	B-1
Existing base plan	B-2
Conceptual layout	B-3
OLA complex	B-4
LTA and maintenance facilities	B-5
LTA workshop/hangar perspective	B-6
LTA hangar and maintenance layout	B-7
LTA maintenance area layout	B-8
LTA headquarters layout	B-9
LTA simulator building layout	B-10
Consolidated vehicle and battery maintenance facility	B-11