RAAF BASE RICHMOND REINVESTMENT PROJECT

RICHMOND, NSW

STATEMENT OF EVIDENCE
TO THE
PARLIAMENTARY STANDING COMMITTEE
ON PUBLIC WORKS

DEPARTMENT OF DEFENCE
CANBERRA, ACT
August 2003

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INTRODUCTION

1. RAAF Base Richmond is a major operational base that supports the delivery of airlift capability for the ADF. Although the RAAF has a long history at Richmond, over the past decade there has been some uncertainty over the longer-term future of the Base. Given this uncertainty, Defence has made only limited investment in maintaining the infrastructure and facilities during that period. Consequently, the Base has deteriorated over time and if an appropriate investment is not made this may adversely affect capability. On 27 August 1998, the Prime Minister announced that RAAF Base Richmond would not close before 2010. This provides the basis for reinvestment in the Base to maintain existing capabilities at least until that time.

2. RAAF Base Richmond contributes to the support of Air and Land Force capabilities.[1] Australia's strategic and tactical Air Lift units operate from and are maintained at RAAF Base Richmond. Army units that are integrally linked with the Air Lift capability are also based or at times supported from RAAF Base Richmond. People are another key and integral element of capability.[2] People in operational and supporting units need to be properly trained and equipped so that when required they can undertake their operational tasks. Consequently, the facilities and infrastructure used to support these people and equipment systems need to be appropriate and in a serviceable condition.

3. This proposal seeks Parliamentary approval for a $35 million reinvestment at RAAF Base Richmond. This project in not a Base redevelopment but rather a limited capital reinvestment to protect Commonwealth assets and maintain existing operational capabilities until such time as a Government decision is made about the longer-term future of the Base. This project seeks to address immediate deficiencies in working accommodation, support facilities and engineering services. Without the reinvestment, the Base infrastructure will continue to degrade and may adversely impact on operations.

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[1] Defence 2000, Our Future Defence Force, Commonwealth of Australia, 2000, pp77-94
[2] ibid, pp61-74

OBJECTIVE

4. The objective of this project is to ensure that RAAF Base Richmond can continue to deliver operational capability to meet Government objectives. The uncertain longer-term strategic outlook for RAAF Base Richmond has resulted in minimal investment over recent years despite significant increases in the operational rate of effort for the deployment of aircraft and personnel. This project seeks to improve, as far as practical, safety and amenity deficiencies to maintain existing capabilities for the medium term.[3]

BACKGROUND

Location

5. The Base occupies approximately 270 hectares of land and is located between the communities of Richmond and Windsor, approximately 60 kilometres west northwest of Sydney. A Base Location Plan is provided at Annex A. Windsor Road runs along the southern perimeter of the Base and is linked to Percival Road, which provides access to the Base. The existing Base layout is at Annex B. The Base is located within the Hawkesbury water catchment area that serves as the major backup water supply for the district.

History of the Development of RAAF Base Richmond

6. RAAF Base Richmond was established as a base for military aircraft on the site of a State Government owned flying school and commenced operations in 1925. The first RAAF squadron to be located at Richmond was Number 3 (Composite) Squadron when it moved there in July 1925. RAAF activities increased at the Base during the 1930s and by the outbreak of World War II, four RAAF flying Squadrons were based at Richmond, together with an aircraft depot. During the war, Richmond developed into a base of major importance to Australia's defence. Since World War II the major organisation to be formed at RAAF Base Richmond was the Air Lift Group in February 1987.

[3] This project does not address relocation issues of various units or the longer-term future of units at the Base.

7. In recognition for its role in developing Australia's air defences from Pre-World War II until the present day, RAAF Base Richmond will be placed on the 'Interim List' on the Register of the National Estate – Australia's list of natural and cultural heritage places.[4] Despite changing requirements over time, RAAF Base Richmond retains almost all of its original structure and fabric. In developing this proposal Defence has been cognizant of the heritage significance of the Base.

8. Since the last PWC report to consider Richmond (Twelfth Report of 1995) the following capital works have been delivered:

- Base Education Facility 1997 - $2.5m
- Aircraft Engine Run-up Facility 1997 - $4.0m
- Alcohol Rehabilitation and Education Program 1997 - $1.8m
- Field Training Flight 1997 - $1.6m
- B707 and C130 Simulator Facility 1998 - $5.6m
- Corporate Services and Infrastructure – Richmond 1998 - $4.5m
- Upgrade Living-in-Accommodation 1998 - $5.2m
- No. 486 Squadron Flightline Management Services Interim Contract Support Store 1998 - $2.6m
- Mobile Hospital Storage Facility 2002 - $0.7m

Role of RAAF Base Richmond

9. Today, RAAF Base Richmond is a large ADF Base accommodating the RAAF's Air Lift Group, Army and other support units. The Base supports approximately 1800 military personnel and between 800 and 850 civilians and contractors. Established facilities at

[4] http://www.ahc.gov.au/news/mediareleases/2003/raaf-bases.html

RAAF Base Richmond are fully utilised. Owing to the shortage of habitable working accommodation on-base, 39 demountable buildings have been installed which accommodate 300 to 450 personnel, depending upon training activities.

10. The major force elements located at Richmond are:

Headquarters Air Lift Group. The Air Lift Group performs command, transport operations, maintenance, training and logistic support.

- Headquarters 84 Wing is located at Richmond and comprises 33 Squadron (Richmond, NSW), 32 Squadron (East Sale, Victoria) and 34 Squadron (Fairburn, ACT).
- Headquarters 85 Wing is located at Richmond and comprises 285 Squadron and Air Movements Training and Development Unit. It is responsible for providing all necessary training for 84 and 86 Wings.
- Headquarters 86 Wing is located at Richmond and comprises 36 & 37 Squadrons (Richmond, NSW) and 38 Squadron (Amberley, QLD).

Combat Support Group (headquarters located at Amberley, QLD). The role of the Combat Support Group is to prepare and train for the provision of Combat Support Services to deployed RAAF operations. In peacetime, 386 Expeditionary Combat Support Squadron located at Richmond provides those services to the Base. The other elements of Combat Support Group located at Richmond are:

- Combat Support Unit, Richmond
- Headquarters 1 Air Terminal Squadron
    - 1 Air Terminal Squadron Detachment, Richmond
- 1 Combat Communications Squadron
- 3 RAAF Combat Support Hospital
- 22 Squadron

Others

- Air Force (headquarters located in Canberra)
    - Management Services Australia, Richmond
- RAAF Training Command (headquarters located in Melbourne)
    - Airwoman/Airmen Leadership Flight, Richmond
- RAAF Air Command Band
- Surveillance and Control Group (headquarters located in Williamtown)
    - Air Traffic Control Flight, Richmond
- Defence Materiel Organisation (headquarters located in Canberra)
    - Air Lift Systems Programs Office, Richmond
- Army Units
    - 176 Air Dispatch Unit
    - 15 Ground Liaison Section
- Corporate Support and Infrastructure - Richmond
- United States Air Force
    - Detachment 1, 635 Air Mobility Support Squadron
- Contractors
    - Serco Sodexho
    - Defence Maintenance Management
    - Qantas Defence Services
    - Lockheed Martin
    - Australian Aerospace

- Marshall Aerospace
- Air New Zealand Engineering Services

GOVERNING CONSIDERATIONS

Master Planning Considerations

11. There is no master plan for RAAF Base Richmond. However, master planning principles have been applied to the development of this project to ensure that it will not limit future options. For example, project elements will comply with statutory issues, such as Explosive Ordnance safeguarding for new construction. More specifically, elements of this project will be subject to technical site selection to achieve an acceptable functional relationship with the existing infrastructure and operations. The proposed locations of works are at Annexes C-1 and C-2 respectively.

12. The proposed works are based on the extant function and personnel numbers. Therefore the scope of this project is not expected to impact on current whole of life costs.

Defence Capability

13. The purpose of these works is to maintain the infrastructure and facilities necessary for the Air Lift Group to meet outputs for Defence Operations, Army Capability and Air Force Capability. More particularly the proposed works are intended to support extant capabilities of the Air Lift Group elements at RAAF Base Richmond. The Richmond Reinvestment Project therefor supports rather than enhances airlift capabilities identified by Government policy.[5]

14. The proposed works are designed to arrest the deterioration of facilities and infrastructure to ensure the extant effectiveness and efficiency of 33, 36 and 37 Squadrons, and other Base support elements. Facilities appraisals have shown that many of the existing buildings and engineering services do not meet current statutory requirements and current practices for working accommodation. Economic analysis reveals that some

[5] ibid, p84, para 8.32

upgrading is practical but other facilities are beyond economic repair and need to be replaced.

THE REQUIREMENT

15. The proposed works focus on certain deficiencies in facilities and infrastructure that support capability. Within available funds, the RAAF Base Richmond Reinvestment Project seeks to address the critical aspects of the engineering services, and working and training accommodation. Factors considered in determining requirements involve medium term risk assessment for capability and ongoing issues pertaining to: occupational health and safety, environment, heritage, and community standards.

16. The package of works identified for this Project is:

- 36 and 37 Squadrons' headquarter complex,
- Mechanical Equipment Operations and Maintenance Section facilities,
- 33 Squadron hangar works,
- 36 and 37 Squadron hangars and associated works,
- High Voltage reticulation upgrade,
- Ablution facilities, and
- Stormwater upgrade.

NUMBER 36 AND 37 SQUADRONS' HEADQUARTER COMPLEX

Function

17. Number 36 Squadron operates C130H aircraft for tactical transport roles, whereas 37 Squadron operates C130J aircraft for strategic transport roles. Although each squadron has a

discrete headquarters, there is no operational imperative for these headquarters to be separated from each other.

18. Many of the headquarters functions are similar in nature, such as command and control, mission planning, and administration. The headquarters have similar functional requirements regarding working accommodation, conference and briefing rooms, storage, and amenities. This commonality provides an opportunity for rationalisation of facilities and space to achieve economies of scale.

Need

19. The headquarters staff experience cramped working conditions within the existing buildings which are not suited for purpose. Number 36 Squadron is accommodated in demountable buildings established in the 1980s which are now in a poor state of repair. Number 37 Squadron operates from a two storey brick building, constructed in the 1950s, which is beyond economic repair. All squadrons have insufficient space for briefing areas, mission planning, ablutions and storage. These buildings do not meet their current purpose in terms of statutory requirements, amenity and functionality.

Options

20. **Option 1 – Do Nothing.** This option will require funding from other areas to repair breakdowns and incrementally upgrade the facilities as deficiencies are identified. It will not address holistically the space, functionality and compliance with the statutory requirements. This option is not recommended.

21. **Option 2 – New Headquarters Complex for 36 and 37 Squadrons.** This option proposes to construct commercial style office accommodation with minimal adaptation for the user squadrons to ensure that they maintain their unit identity. It is proposed to share medium and low use common facilities, such as: briefing and training rooms; ablutions and change areas; and secure areas.

22. **Preferred Option.** Option two is recommended. The construction of a new combined headquarters will provide a complex that will address functionality through a high degree of commonality and achieve economies of scale. The design will allow for adaptive re-use, should future requirements change.

Proposal

23. The combined headquarters will include:

- office accommodation;
- training facilities;
- conference and briefing rooms;
- amenities, ablutions and change rooms;
- secure area; and
- storage.

24. It is intended to site the building within the existing functional precinct to maintain the current functional relationships. An indicative layout of the building is attached at Annex D.

MECHANICAL EQUIPMENT OPERATIONS AND MAINTENANCE SECTION

Function

25. The Mechanical Equipment Operations and Maintenance Section (MEOMS) provides the operational maintenance support for the majority of the mechanical equipment used on RAAF Base Richmond and directly supports the operations of the Air Lift Group. These functions include maintenance and repairs to special purpose vehicles and ground support equipment. MEOMS also operate a fuel quality test laboratory and manages the fuel storage and distribution facility at the Base.

Need

26. The existing workshop and hangar areas for MEOMS do not meet occupational health and safety requirements. For example, there is inadequate ventilation in the fuel-testing laboratory. These buildings are degraded and beyond economic repair.

Options

27. **Option 1 – Do Nothing.** Over time the degradation of existing facilities will continue to exacerbate present Occupational Health and Safety problems. In particular, some of the buildings contain asbestos. This option is not recommended.

28. **Option 2 - Refurbish Existing Facilities.** The majority of existing facilities are in poor condition and the removal of asbestos would make remediation uneconomical. This option is not recommended.

29. **Option 3 – New Facilities.** Construct new facilities in the vicinity of the current site. This provides an opportunity to rationalise functions and to meet regulatory requirements.

30. **Preferred Option.** Option three is recommended. The construction of new facilities will provide improved functionality and working conditions to meet extant and enduring requirements.

Proposal

31. The construction of a purpose designed facility to provide the necessary functions for MEOMS will include:

- a combined headquarters, administration and workshop,
- weather protection for military specific vehicles,
- a fuel testing laboratory, and
- amenities.

32. It is intended to site the new buildings within the existing functional precinct to maintain the current functional relationships. An indicative layout of the proposed works is attached at Annex E.

NUMBER 33 SQUADRON HANGAR WORKS

Function

33. RAAF provides on-base operational level maintenance for 33 Squadron. A contractor provides depot level maintenance at Richmond. Both operational and depot level maintenance are performed in the same hangar (Building 522).

Need

34. There is insufficient storage space within the hangar for general service equipment (GSE) used in the maintenance of 33 Squadron aircraft. Undercover storage is required for this equipment. workshop facilities are congested and do not conform to regulatory requirements,

Options

35. **Option 1 – Do Nothing.** The option to continue using the existing facilities without any refurbishment works will result in the equipment being stored outdoors without weather protection and therefor subject to higher rates of deterioration. This option is not recommended.

36. **Option 2 - Additional Facilities.** Construction of an undercover storage facility for general service equipment will address functionality issues and resolve pressing storage deficiencies.

37. **Preferred Option.** Option two is the only practical solution and is recommended.

Proposal

38. The construction of an extension to the eastern side of the hangar (Building 522) to provide undercover storage for general service equipment.

NUMBER 36 AND 37 SQUADRON WORKSHOP AND HANGAR WORKS

Function

39. The RAAF provides on-base operational level maintenance for 36 Squadron from Building 523 and for 37 Squadron from Building 320. Number 36 Squadron shares Building 523 with a contractor who has access to two bays within this three-bay hangar. Depot level maintenance is provided on-base by contractors.

Need

40. The provision of appropriate workshop and hangar facilities is vital to the aircraft maintenance program for these squadrons. Existing 36 Squadron workshop facilities give rise to occupational health and safety problems. Further, staff are congested within their current buildings. These buildings are dispersed over four sites thereby creating a dysfunctional working environment. Existing 37 Squadron workshop facilities also create occupational health and safety problems. The poor state of these facilities has an adverse effect on workshop productivity and operational preparedness.

41. There are pressing space requirements to meet administration, storage and support function for 36 and 37 Squadrons. Furthermore the following occupational health and safety deficiencies and potential environmental risks have been identified with:

- metal workshops for 36 and 37 Squadrons,
- flammable substance storage facilities for 36 and 37 Squadrons,
- propeller maintenance areas for 36 Squadron, and
- spray-painting booth for 36 Squadron.

Options

42. **Option 1 - Do Nothing.** This option will continue to expose RAAF personnel to health and safety risks and will not address potential environmental risks of paint spills. This option is not recommended.

43. **Option 2 - Refurbish Existing Facilities.** Upgrading the existing facilities will significantly reduce the health, safety and environmental risks. This option is recommended.

44. **Option 3 - New Facilities.** Rebuilding can only take place on an occupied site that is outside the explosive ordnance safeguarding line. Demolition of another facility is required for this option. This option is not practical and hence it is not recommended.

45. **Preferred Option.** Option two is recommended because it is the only cost effective practical solution.

Proposal

46. The proposed refurbishment of existing facilities will upgrade:

- workshops in Building 320 including separation of the metalwork area,
- engineering services including ventilation and climate control to workshops, offices and amenities in Building 320,
- spray paint area including waste disposal and ventilation systems in Building 523,
- ablutions area in Building 523,
- engineering services including ventilation and climate control to workshops, offices and amenities in Building 523 and
- workshops in Buildings 523, 350 and 122.

HIGH VOLTAGE RETICULATION UPGRADE

Function

47. A consistent reliable supply of high voltage power is critical to the successful functioning of RAAF Base Richmond. The reticulation of high voltage power throughout the base is

achieved via a network of substations based on two ring mains. The base has an old emergency back-up power generation system capable of addressing a short period of supply interruption.

Need

48. The current electrical reticulation system does not allow the even distribution of power throughout the base, leading to power outages. There are areas where cables are undersized, adding to the risk of outages in periods of high demand. Some substations are subject to localized flooding, while others contain oil filled switchgear that is old and less reliable than modern switching systems. These present potential fire risks and add to the overall inefficiency of the system. Some of the electrical equipment in the Central Emergency Power Station is unreliable and needs replacement.

Options

49. **Option 1 – Do Nothing.** Power outages will continue especially if there is increased demand across the Base over time. Additionally, as more operational demand is placed on components within the reticulation the chance of failure in the emergency powerhouse component increases. This option is not recommended.

50. **Option 2 – Minimalist works within available funding.** This option addresses clear and present risks to the high voltage reticulation and includes areas such as investigating and rationalising of the load shedding system, decommisioning a substation, and replacing old oil filled switchgear, transformers, switchboards and potentially upgrading in-ground cabling. This option is recommended.

51. **Option 3 – Complete works.** This option addresses supply to and reticulation within the Base. It would involve a new substation and replacement of high and some low voltage equipment. This option is not cost effective within the project budget but would resolve all supply and reticulation issues. Within the project intent this option is not recommended.

52. **Preferred Option.** There are some works considered essential to improve the performance of the high voltage reticulation system. Option two is the recommended option.

Proposal

53. The proposed works include the decommissioning of an unsafe substation, upgrading undersized cables, and replacing old switchgear, transformers and switchboards. The proposed works will increase the capacity of the existing ring mains by upgrading cable sizes and will improve the load distribution around the network.

ABLUTION FACILITIES

Function

54. The purpose of the ablution facilities is to install an appropriate standard of amenities in the western portion of RAAF Base Richmond where there are insufficient toilets and showers.

Need

55. The majority of the population is in the western portion of the Base and this population has increased over time. Current ablutions do not meet the existing Building Code of Australia requirements. Over time the ratio of females has increased and this has created a gender specific requirement.

Options

56. **Option 1 – Refurbish Existing Facilities.** This option would require upgrading ablution blocks in existing buildings within existing space envelopes. Implementation of this option will not address the overall shortfall of ablution facilities. This option is not recommended.

57. **Option 2 - Build a New Facility.** Construct two new ablution blocks at available sites within the working precinct where existing facilities are inadequate. This option is recommended.

58. **Preferred Option.** Option two is recommended.

Proposal

59. The proposal includes two male and female ablution and change facilities as shown at Annex C-8 to service the western portion of RAAF Base Richmond.

STORMWATER UPGRADE

Function

60. Most rain events were designed to flow through pipes. The topography of RAAF Base Richmond is generally flat with stormwater draining via a network of pipes and overland channels mainly to the northern and eastern perimeter. On leaving the Base the stormwater flows into Rickabys Creek and the Hawkesbury Water Catchment Basin.

Need

61. Investigations have revealed that elements of the stormwater system have failed. For example, tree roots and soil have blocked or collapsed pipes altering the direction and rate of run-off.

Options

62. **Option 1 - Repair and upgrade priority elements of system.** Replace or repair priority elements of system to prevent local flooding and unintended discharge of gross pollutants, oils and grease. Replaced elements will conform to current standards. This option is recommended.

63. **Option 2 - Upgrade stormwater system to cater for a 1 in 20-year storm event.** A Base wide replacement of pipes and pits to direct most of the stormwater through sub surface pipes. This option is not considered cost effective and not recommended.

64. **Preferred Option.** Option one is recommended as it restores the original design intent. Pollutant traps are highly likely to function in accordance with their intended purpose and any replaced elements will be upgraded to current standards.

Proposal

65. The proposed works include:

- Repair or replace damaged sections of the system
- Upgrade elements of the system to prevent local flooding and provision of connection for new facilities.

DESIGN CONSIDERATIONS

Design Standards

66. The design standards are required to military and civilian standards. The standards for planning Australian Defence Force airfields are based on the Australian Defence Force publication 'Joint Services Works and Administration Aerodrome Design Criteria'. Where appropriate, the design of new facilities would conform to the relevant sections of:

- Building Code of Australia,
- Relevant Australian Standards and Codes,
- Occupational Health and Safety (Commonwealth Employment) Act, 1991
- Defence Manual of Fire Protection Engineering (MFPE),
- Defence Security Manual (SECMAN),
- Defence Explosives Safety Manual (OPSMAN3),
- Manual for NATO Safety Principles for Storage of Military Ammunition and Explosives,
- Environmental Protection and Biodiversity Conservation Act and Regulations,
- Workplace Health and Safety Act and Regulations,
- Convention on International Civil Aviation, Volume 1, Annex 14; and
- Australian Rules and Practices for Aerodromes.

Design Philosophy

67. The general philosophy to be adopted with the design of the proposed facilities is cognisant of the longer-term future functions and investment at RAAF Base Richmond. It shall incorporate the following considerations:

- infrastructure and facilities will be constructed within existing functional areas,
- the provision of flexible commercial style working accommodation with minimal adaptation for current specialist tenants to meet their operational needs,
- the provision of common facilities where appropriate,
- the provision of cost effective and environmentally sustainable design suitable for the climatic conditions, and of a style compatible with the existing facilities at RAAF Base Richmond,
- the provision of infrastructure designed to meet the minimum likely demands, and
- new works will conform, as far as practical, to the current maintenance intent.

Philosophy Adopted for the Design of the Fire Protection System

68. The following philosophy has been adopted in respect of the design of the fire protection systems:

- All construction and fire protection requirements will, as a minimum, be in accordance with the provisions of the Building Code of Australia (BCA), the Defence Manual of Fire Protection Engineering (MFPE) and all other applicable Codes and Standards. The levels of fire protection specified will be above BCA requirements and have been determined by a risk assessment and risk management approach to fire protection.
- Defence will require certification from a suitably qualified certifier, that the design and construction meet the requirements of the BCA, MFPE, relevant Codes and Standards and any additional State and Defence requirements.

- 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 Director General level.
- Successful tenderers will be required to produce a Quality Assurance Plan to clearly show how the BCA, Australian Standards and any additional Defence requirements in relation to fire protection/fire safety will be met and maintained.

Philosophy Adopted for Energy Management and Lighting

69. A key design focus is improved energy management to ensure ecologically sustainable development and reduction of greenhouse gas emissions. 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, with energy efficiency being a key objective. Concept designs will include an analysis of energy delivery and consumption systems, incorporating an estimate of any additional energy consumption and costs that are expected to result from the implementation of the concepts. Facilities will incorporate building management systems, metering and other provisions to measure energy use and to allow regular energy audits.

70. To reduce energy consumption and consequential greenhouse gas emissions, lighting is to be controlled, where possible, by photoelectric switches in conjunction with time switch schedules. This is to include provision of personal sensor controlled lighting to intermittently occupied areas. Lamps are to be high efficiency fluorescent, compact fluorescent or discharge type. External lighting is to be designed to minimise glare and colour distortion. The air-conditioned areas will be controlled by the building management system and include time switches where appropriate to reduce running costs.

Philosophy Adopted for Precautions against Legionella

71. As air cooled air-conditioning systems are proposed, no specific precautions against the Legionella Bacillus are considered necessary.

Design Features

72. The design, structure, servicing and siting of buildings is to ensure that future expansion is possible. Each sub-element of the facility should have the capacity for future expansion. This is of particular importance in sizing and terminating in-ground services. New mechanical plant should have spare capacity, be modular and have a multiple control approach, to ensure flexibility.

73. Maximum flexibility is required for most internal office accommodation facilities. Except where the need for security, privacy or noise reduction dictates otherwise, minimum use is to be made of structural internal walls or columns. In general terms, internal walls in office areas are to be of demountable partition or workstation type to facilitate economical rearrangement. Building services are to be compatible with this requirement.

74. This project will require:

- The maximum use of existing infrastructure to minimise capital facilities costs,
- The adoption of conventional construction techniques and materials, with due regard given to climatic conditions,
- The utilisation of readily available and durable materials that combine long life with minimum maintenance,
- Sympathy with the existing buildings and precinct, and
- Landscaping and the preservation of the visual environment.

75. The building works and services will be fully fitted out, with all communications, light fittings, partitions, floor treatments and furniture. Facilities will incorporate building management systems, metering and other provisions to measure and monitor energy use and to allow regular energy audits.

Acoustics

76. RAAF Base Richmond operates mainly propeller aircraft and therefor is significantly quieter than airfields operating jets. Appropriate sound attenuation provided through construction techniques and materials will meet Australian Standards.

ECONOMIC, ENVIRONMENTAL AND SOCIAL IMPACTS

Cost of Works

77. The out-turn budget for this project is $35m. This includes management, design, construction, furniture, fittings and equipment together with appropriate allowances for contingency and escalation (but excludes any Goods and Services Tax liability). On-costs likely to be incurred because of the location have been factored into the estimates, as have allowances for the particular geology of the region, since these matters will affect drainage works, foundations, in ground services and civil works.

Construction Workforce

78. Over the envisaged construction period of three years, an average of about 50 personnel will be directly employed on construction activities. In addition, it is anticipated that construction would generate further job opportunities off-site from the prefabrication of components, and the manufacture and distribution of materials.

Timings

79. Subject to Parliamentary approval, the works are planned to be committed in the later half 2003, with construction commencing in 2004. Project completion is planned towards the end of 2006.

Environmental Implications

80. The Commonwealth is committed to improved energy management to ensure ecologically sustainable development and the reduction of greenhouse gas emissions. In compliance with this commitment, energy efficiency is to be a key objective in the design, development and delivery of Defence facilities projects.

81. No significant environmental issues appear to exist, so under the *Environmental Protection and Biodiversity Conservation Act* 1999, a Defence internal Environmental Certificate of Compliance will be prepared in accordance with Defence Environmental Management Policy. Further environmental studies are in train, with a view to develop appropriate management regimes and referral action if necessary.

82. RAAF Base Richmond is managed in accordance with the current Environmental Management Plan. Contractors will be required to produce Environmental Management Procedures for Construction Activities as a contractual obligation, and these procedures will be audited as an element of project management.

Heritage Implications

83. A Cultural and Heritage Assessment was carried out for the base in 2002. The options considered during the development of the proposed works were cognizant of the potential heritage issues. On 20 May 2003 this was confirmed through a media release from the Chairman of the Australian Heritage Commission that indicated RAAF Base Richmond would be placed on the 'Interim List' of the Register of the National Estate. This listing is not expected to significantly affect the project options because:

- Mechanical Equipment Operations and Maintenance Section. Option three proposed the construction of new facilities in the same area. This option requires the demolition of three out of the five hangars. There is no intention to alter the structure or fabric of the two remaining hangars as part of this project.

CONSULTATION WITH EXTERNAL AUTHORITIES

84. The following authorities and organisations may be consulted during the development of the project:

- Federal and State Government Representatives for the area,
- Australian Greenhouse Office,
- Australian Heritage Commission,
- Environment Australia,
- NSW Premier's Department,
- NSW Department of Land and Water Conservation,
- NSW Department of State and Regional Development

- Planning NSW,
- Defence Housing Authority,
- Australian Gas Light Company Ltd,
- Integral Energy,
- Hawkesbury Economic Development Advisory Committee
- Hawkesbury City Council, and
- Richmond Community Liaison Committee.

DELIVERY MECHANISM

85. The project will be delivered as two major packages, the new Headquarters complex and the Mechanical Equipment and Operations Maintenance Section facility, and a number of smaller works packages. This will promote access for local small to medium enterprises. The design will be carried out by separate contracts to allow Defence to exercise tight control over the project scope.

OTHER RELATED DEFENCE WORKS

86. Other related Defence works at Richmond include:

- Upgrade Fuel Farm Two and decommission Fuel Farm One - $3.1m,
- Asbestos removal and recladding of Building 522 - $1.3m,
- Upgrade of Air Lift Systems Program Office - $1.6m, and
- Demountable maintenance shelter - $2.0m.

FUTURE WORKS AT RAAF BASE RICHMOND

87. Subject to further Government direction on the future of RAAF Base Richmond additional works may be considered.

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