



**REDEVELOPMENT OF  
KOKODA BARRACKS  
CANUNGRA, QUEENSLAND**

**STATEMENT OF EVIDENCE  
TO THE  
PARLIAMENTARY STANDING COMMITTEE  
ON PUBLIC WORKS**

**DEPARTMENT OF DEFENCE  
CANBERRA, ACT**  
April 2005

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# **REDEVELOPMENT OF KOKODA BARRACKS, CANUNGRA, QLD.**

## **PART A - JUSTIFICATION**

### **INTRODUCTION**

#### **Background**

1. This evidence to the Parliamentary Standing Committee on Public Works presents a proposal for the redevelopment of Kokoda Barracks, Canungra, Queensland. A Location Plan is at Attachment 1 and a Base Plan at Attachment 2.
2. A Land Headquarters Training Centre (Jungle Warfare) was first established at Canungra in 1942 to provide training for Australian troops before their departure for combat in the Asia-Pacific theatre of World War II. Canungra was chosen because it best replicated the environment of the Pacific Region and was accessible by an existing railway that enabled the easy movement of troops between Brisbane and Canungra. The Jungle Training Centre, as it became known, closed shortly after the end of the war. The site reopened in 1954 in response to perceived threats emerging in South-East Asia and was expanded to cover the range of environments found in that locality. Between 1955 and 1966, some 9,500 troops were trained at Canungra for active service in the Malayan Emergency and the Borneo Conflict. Every unit that went to South Vietnam between 1962 and 1972 completed a period of rigorous and realistic Battle Efficiency training at Canungra before departure overseas.
3. The former School of Tactics and War Administration relocated to Canungra in 1960 and eventually became the Command, Staff, and Operations Wing in 1997. A Warrant Officer Wing, raised in Canungra in 1976, became the Warrant Officer and Non-Commissioned Officer Wing in 1978. The two wings amalgamated as the Army Promotion Training Centre in 1998. Over the years, the focus of their training had evolved in response to an expanding training role and an emphasis on career development training. The Army Promotion Training Centre became Headquarters Regional Training Centres in December 2000 with responsibility also for regional training centres.

4. The former School of Military Intelligence relocated to a purpose-built facility at Canungra in 1984. In 1994, the intelligence training resources of the Defence Intelligence Organisation, the Royal Australian Air Force, and the Royal Australian Navy, amalgamated as the Defence Intelligence Training Wing collocated at Canungra. The School of Military Intelligence and the Defence Intelligence Training Wing amalgamated as the current Defence Intelligence Training Centre in 1997 and relocated from the original 1984 building to its new facility at Canungra in 2003.

5. The military area at Canungra comprises about 6,000 hectares and consists of the Cantonment, where Kokoda Barracks is situated on about 100 hectares, and the Close Training Area where field-training activities are carried out. Canungra continues to be a significant Defence training establishment and the Strategic Plan for the Defence Estate provides for its retention. Army's Strategic Planning Guidance for Kokoda Barracks and the Canungra Military area sets out long-term planning for the development of the area, with its principle role as the base for Army Career Development, Defence intelligence training, and sub-unit battle training.

6. The following Defence organisations are currently accommodated at Kokoda Barracks:

- a. **Headquarters Regional Training Centres** provides Army Career Development training, and has direct command of Army's eight Regional Training Centres throughout Australia including the Regional Training Centre located at Canungra;
- b. **Defence Intelligence Training Centre** provides individual intelligence training and education to meet the needs of the Defence intelligence community; and
- c. **Corporate Services and Infrastructure - Canungra** provides administrative and logistic support to the Defence Organisations at Canungra.

7. The Kokoda Barracks currently has a maximum daily population of nearly 1,450 comprising about 400 staff (including about 150 contractors), some 650 trainees, and about 400 dependents. Of the trainees, about 230 attend training activities conducted by Headquarters Regional Training Centres and about 155 attend the Defence Intelligence

Training Centre. The remaining trainees, up to 240 in number, can live under canvas at the Battle Ridge Training Facility, where they are largely self-contained, while participating in sub-unit training activities of relatively short duration.

### **Cost Implications**

8. The proposed redevelopment of facilities at Kokoda Barracks would involve construction of new buildings, upgrading of existing buildings, and the upgrading of the services infrastructure at an estimated 2004-05 out-turn cost of \$86.7 million excluding GST.

### **Requirement Summary**

9. More than 70% of the buildings at Kokoda Barracks were constructed before 1975. Most of the pre-1975 buildings are timber-framed construction clad with either timber or metal sheeting. By their nature, timber buildings involve higher maintenance costs for structural repairs and repainting and are susceptible to termite damage. Most of the facilities, particularly those used for training delivery are equipped with outdated technology, do not meet Occupational Health and Safety standards, and require high levels of maintenance. The efficient use of many buildings is no longer possible because of an increase in personnel numbers, changes in functional requirements over the years and advances in training methodology. While the existing services infrastructure remains operational, it is ageing and some services such as water reticulation and sewer require major replacement or significant upgrading.

10. The important training role and long-term future of the Barracks and adjacent training area requires a major improvement in training support and base administration services generally, and living and working accommodation that aligns more closely with current community standards. The redevelopment proposals outlined in this evidence are designed to ensure that Kokoda Barracks, and the wider Canungra Military Area, can operate effectively as a training base over a thirty-year planning horizon and would involve:

- correction of working and training accommodation deficiencies;
- rationalisation of messing facilities;
- improvements to living-in accommodation for trainees;



- upgrading of the engineering services infrastructure; and
- disposal of redundant, high maintenance facilities.

## **OBJECTIVES**

### **Functions**

11. The proposed redevelopment will provide the working and domestic accommodation and engineering services infrastructure required for the ongoing delivery of effective training at the Canungra military area. For planning purposes, the maximum total population of the Kokoda barracks is approximately 1450. The annual training output is approximately 8,700.
12. Headquarters Regional Training Centres and Regional Training Centre South Queensland conduct a range of Officer and Warrant Officer career development courses at Kokoda Barracks. Staff numbers total 125 for these organisations. The annual training output is 4,850, with a maximum of approximately 230 trainees on course at any one time.
13. The Defence Intelligence Training Centre has about 115 staff located at Canungra. The centre conducts a range of courses attended by trainees from intelligence units and agencies throughout Australia. The centre also conducts Defence Cooperation Program sponsored training of foreign military personnel. Most courses require trainees to live on base, with about 155 trainees resident at any one time. The Defence Intelligence Training Centre annual training output is about 1,450.
14. The former Battle Ridge Training Facility does not provide accommodation for any permanent staff. The facilities are for short-duration training deployments, normally of about two weeks, involving a maximum of about 240 personnel living under canvas and conducting their own training programs. Canungra-based personnel provide administrative support for these activities. About 2,400 personnel use the Battle Ridge facilities annually.
15. Corporate Services and Infrastructure – Canungra provides administrative, logistic, domestic and information services support to sustain the operations of the military formations located at Canungra. This element has about 20 permanent staff and 150 contractors, some of whom require office accommodation.

## **Defence Objectives**

16. The Defence White Paper *Defence 2000 – Our Future Defence Force* endorsed the criticality of training as part of its strategy to attract and retain high quality people.

The White Paper noted *inter alia*:

*“6.15 ..... Training. Operations like INTERFET and the Peace Monitoring Group on Bougainville place great demands on the training and personal quality of the men and women of the ADF. In sometimes dangerous and ambiguous situations, they can be called upon to make snap judgements that can have life and eath significance. Often these decisions must be made on the spot by junior personnel who must have the training, preparation and personal qualities to handle such situations.”* and

*“7.40 Innovation will also play a key role in improving Defence education and training. More use will be made of flexible learning techniques, featuring enhanced information systems. Simulators will play a greater role on providing cost effective training.*

*“7.41 These initiatives will complement the ADF’s existing operational training regimes. In training their people for operations, the Services are also embracing leading edge practices that give our force a crucial edge.”* and

*“10.8 The RMA (Revolution in Military Affairs) also places a high premium on new personnel skills, training approaches and organizational structure.”*

17. Training is a part of the Fundamental Inputs to Capability (FIC) and this proposal impacts on both individual and collective training and thus directly on the preparedness levels of Army especially, but also of other services and Defence through the Intelligence training conducted at Kokoda Barracks.

## **Date for Completion**

18. Subject to Parliamentary approval of this project, the redevelopment of Kokoda Barracks could commence in the latter half of 2005 with completion by January 2008.

## **THE PROPOSALS**

19. The proposals addressed in this evidence involve fifteen integrated project elements that are briefly summarised in the following paragraphs. Value management studies will be undertaken during the design phase to examine what further rationalisation of the proposals might be possible.

### **Regional Training Centres**

20. Building B2 is available for adaptive re-use following the relocation of the current occupants to the new Defence Intelligence Training Centre in 2003. Building B2 would be upgraded to provide improved and expanded office accommodation for Headquarters Regional Training Centres. The upgrading proposals include the construction of a new entry, the installation of a new lift for improved access for people with disabilities, provision of additional amenities, and new engineering services. The existing theatre located in Building B2 would be retained as base-wide facility. Preliminary concept drawings for the Building B2 proposal are at Attachments 3 and 4.

21. Building A1, currently accommodating administration and training functions, would be upgraded as the focal point of a combined training complex occupied by Regional Training Centre – South Queensland (RTC-SQ). RTC-SQ current accommodation (Building N3) would then become available for other use as indicated below. The upgrading proposals include the construction of a new extension providing a theatre and twelve additional syndicate rooms, provision of additional amenities, and improved engineering services. Preliminary concept drawings for the Building A1 proposals are at Attachments 5 and 6.

### **Field Training Facilities**

22. Buildings C7, C8, C9, and C10 located in the former Field Engineers Yard require occupational health and safety compliance repairs. These facilities are now used for supervised training activities requiring trainees to work under field conditions. They are being retained exclusively for that purpose and there is no requirement for a more general upgrade or refurbishment.

### **Information Systems**

23. The communications/data systems proposal involves a significant infrastructure upgrade, developed in accordance with the Canungra Communications Master Plan, to provide the required level of systems support throughout Barracks. The proposed works include the installation of pits and ducts throughout the base and extension of the fibre and copper communication networks to provide dual connectivity.

### **Services Infrastructure**

24. The Engineering Services Infrastructure proposals cover seven sub-project elements as follows:

- a. Sewerage:* includes construction of a new sewerage treatment plant, the repair and restoration of sections of pipework and manholes, and sundry supporting works;
- b. Stormwater:* includes the upgrading of the stormwater drain reticulation incorporating pollutant traps and separators and supporting works to achieve specified water quality outcomes;
- c. Water Supply:* includes replacement of the existing water main by the construction of a new combined domestic and fire ring main system boosted to achieve servicability standards for both the domestic and fire reticulation mains;
- d. Power:* includes replacement of existing aerial high voltage cables with underground reticulation and the provision of additional street lighting;
- e. Gas:* includes the extension of the existing gas main to new and upgraded buildings to supply gas boosted solar hot water systems; and
- f. Roads:* includes the construction of a new main access road from Beechworth Road and general repair and maintenance works within the Barracks area.

### **Multi-Use Facility**

25. Building N3 currently accommodates Regional Training Centre functions that would relocate to upgraded Building A1 as previously indicated. Building N3 would be upgraded as a multi-use facility accommodating the following activities/functions:

Corporate Services and Infrastructure – Canungra (existing facilities currently dispersed across the base);

Print Shop (currently located in Building N3);

Library (currently located in Building B7);

Military Museum (currently located in Building B6); and

Visitor Centre (new function not currently provided).

26. The Building N3 upgrade proposal includes an extension to the building, the construction of a new entry to the first level, the installation of a new lift for improved access for people with disabilities, provision of additional amenities, and new engineering services. The proposed new Military Museum would incorporate the current Canungra collections, with the proposed new Visitor Centre, providing a focal point for public access to the history and military tradition of the Kokoda Barracks and the adjacent training area. Preliminary concept drawings for the Building N3 proposals are at Attachments 7 and 8.

### **Messing**

27. The proposals described below involve Buildings N8, N9 and B11 and provide rationalised messing facilities that meet current Defence standards:

- a. *Officers/Senior Non-Commissioned Officers.* A new combined kitchen would be constructed as a linked extension between Buildings N8 and N9, both of which would be upgraded. In addition to the single kitchen serving both messes, the proposal incorporates a new dining area for Senior Non-Commissioned Officers, as well as new ramps and a lifting platform to provide improved access for people with disabilities. A preliminary concept drawing for the Buildings N8 and N9 proposals is at Attachment 9.

- b. *Other Ranks:* The proposals for upgrading Building B11 includes complete refurbishment of the existing kitchen, new covered double entries and entry ramp and provision of dining and severy facilities to accommodate up to two sittings of up to 260 meals per sitting.

### **Fitness Centre**

28. A new Weights Training Hall is proposed adjacent to the existing gymnasium in Building B23. The proposal for the existing gymnasium includes rectification of mechanical exhaust deficiencies, minor remedial works and conversion of the existing store room adjacent to the main entry into a new fitness centre admin area . A preliminary concept drawing for the Weights Hall proposal is at Attachment 10.

### **Living In Accommodation**

29. The proposals described below provide rationalised living facilities that meet current standards for trainees and involve three new facilities and the existing assets indicated under each heading:

- a. *Officers:* Buildings N4, N5, and N7 would be upgraded to provide 175 individual rooms in similar configuration to the existing buildings. The upgraded buildings will meet meeting Building Code of Australia fire safety performance requirements. Buildings N6 (32 day-rooms) and N8 (54 day-rooms) cannot be satisfactorily upgraded to current standards, are unsuitable for retention, and would be demolished.
- b. *Senior Non-Commissioned Officers:* Two new facilities, each providing 40 individual rooms of 18m<sup>2</sup> to accommodate trainees and incorporating a common room and storage space, would be constructed. Building N16 (34 single living rooms) would be upgraded. Buildings N9 (36 day-rooms) and N11/N12 (86 rooms) cannot be satisfactorily upgraded to current standards, are unsuitable for retention, and would be demolished. Preliminary concept drawings for the proposed new facilities are at Attachments 11, 12, 13, and 14.
- c. *Other Ranks:* One new facility, providing 26 individual rooms each of 18m<sup>2</sup> to accommodate trainees would be constructed. The recently refurbished

Building B13 (104 rooms) would receive a communications upgrade to provide connection to the Defence Training Network. Buildings B14 and B15 (each containing 39 dormitory-rooms) cannot be satisfactorily upgraded to current standards, are unsuitable for retention, and would be demolished. Preliminary concept drawings for the proposed new facility are at Attachments 15 and 16.

### **Medical Centre**

30. Building N13 would be subject of minor structural repairs and would be upgraded for continued use as the Base Medical Centre. The Centre does not provide in-patient care.

### **Quartermaster**

31. Electronic security would be installed to the existing armouries in Building A2, Quartermaster Store.

### **Workshops**

32. Buildings C11 and C13 would be subject to occupational health and safety upgrades and continue to accommodate workshop functions.

### **Environmental Manager**

33. Building C17 would be upgraded and continue to provide office accommodation for the Environmental Manager of the Training area. A new amenities building would be constructed adjacent to Building C17.

### **Temporary Facilities**

34. While it is expected that training functions will continue throughout the building program, there will inevitably be some disruption over the twenty-eight month construction period. The project budget includes an allowance for the provision of temporary accommodation for functions that cannot remain in their current accommodation while renovations are in progress or when relocation of a function is delayed pending completion of the proposed facility.

### **Disposals**

35. A number of redundant buildings will be removed as they are vacated. All removals/demolition will comply with cultural heritage requirements and ecologically sustainable development criteria.

### **Capacity**

36. In 2005, Canungra's daily population will be about 1400, which includes some 400 dependents. The working facilities at Canungra will accommodate about 1050 personnel comprising about 250 members of staff, about 150 contractors, up to 600 trainees, and a fluctuating, but small, number of visiting lecturers.

### **Location**

37. The proposals outlined in this evidence are confined to the Kokoda Barracks, located two kilometres east of the township of Canungra approximately ninety kilometres south of Brisbane and thirty-five kilometres west of the Gold Coast.

### **Benefits of Expected Improvements**

38. Improvements to living and working accommodation and the associated services infrastructure would provide functional, planning, and operational advantages and enhanced training efficiency in meeting the training requirements of the Australian Army. The new and upgraded living accommodation for trainees will align more closely with community standards. The standard of existing living and working accommodation has been recognised by Government as a personnel retention issue.

## **COSTS**

### **Cost Estimate**

39. The estimated outturn cost of the proposed redevelopment of Kokoda Barracks project is \$86.7 million excluding GST. The cost estimate includes construction costs with fit out, professional fees, furniture and fittings, and a contingency sum.

### **Expected Savings**

40. The redevelopment of Kokoda Barracks will not produce any savings. A slight increase in annual operating costs has been identified due to extended data and communications infrastructure costs and depreciation allowances. These increased costs



will outweigh the savings expected from reduced energy, maintenance and garrison support costs.

## **OPTIONS**

41. This proposal specifically addresses the upgrading of existing facilities and engineering services infrastructure and limits new construction to replacing facilities and engineering services infrastructure that are unsuitable for retention or cannot economically be adapted to meet current requirements. There are no alternative locations and all the proposed works are located within Kokoda Barracks. Design solutions have yet to be finalised.

### **Engineering Services**

42. The option to integrate the Kokoda Barracks sewerage treatment facilities into the Beaudesert Shire Council plant has been investigated in a series of water management studies. Integration would eliminate future on-site recycling opportunities for Defence and be contrary to ESD best practice of treating polluted water at its source for potential re-use. In addition, integration of wastewater treatment alone has no direct benefit to the Beaudesert Shire Council and poses significant cost and risk to Defence.

## **ECONOMIC, ENVIRONMENTAL, AND SOCIAL IMPACTS**

### **Economic Impacts**

43. This proposal will not produce revenue. Up to seventy personnel are expected to be directly employed on construction activities that would also generate some off-site job opportunities from the manufacture and distribution of materials over the anticipated construction period of some twenty-eight months. It is anticipated that local building subcontractors would be employed on a large proportion of the construction works and some of the infrastructure works.

### **Environmental Impacts**

44. The implementation of the proposals outlined in this evidence will comply with the principles of ecologically sustainable development. All works contracts will bind the Contractors to achieving ecologically sustainable development objectives and targets.

45. Defence's Environment Heritage and Risk Branch has determined that the works in this proposal are unlikely to have a significant impact on the environment and does

not require referral to the Department of the Environment and Heritage under the Environment Protection and Biodiversity Conservation Act 1999.

46. As a contractual obligation, the Managing Contractor will be required to develop a Construction Environmental Management Plan covering all the proposed works. Based upon this plan, a Defence Environmental Certificate of Compliance will be submitted for approval before the commencement of construction, in accordance with Defence's Environmental Management Policy. The procedures contained in the Construction Environmental Management Plan will be regularly audited by Defence's Project Manager.

### **Heritage Impacts**

47. The former Land Warfare Centre, Canungra, was listed on the Register of the National Estate as "an area of natural significance" in 1996 and is therefore subject to the provisions of the Australian Heritage Commission Act (1975). The area nominated for the Register includes the entire Land Warfare Centre, except for Kokoda Barracks and a grazing lease on the eastern side of the Close Training Area. The proposals outlined in this evidence are contained within the Kokoda Barracks and while they fall outside the National Estate Register listing, the Department of Defence is conscious of the high level of heritage interest in Kokoda Barracks.

48. Canungra enjoys a special significance in the history of the Australian Army for veterans of World War II as well as those involved in subsequent conflicts. Several memorials have been established over the years on the knoll immediately on entry via the proposed new entrance point on Middle Ridge. The Museum and Visitor Centre in the proposed Multi-Use Facility would reinforce and focus the new entry of the barracks, to be centred on the Memorial Wall and Memory Hill.

### **Social Impacts**

49. The redevelopment would have minimal impact on the local community either during or post construction. During the construction phase, some employment opportunities may become available for local tradespeople. With the current tempo of construction in south-east Queensland, the construction traffic for the redevelopment is expected to have very little impact on local traffic. There would be little noticeable difference in the day-to-day activities of Kokoda Barracks.

### **LONGER TERM PLANNING**

50. There is currently no funding provision for any additional major works at Canungra in Defence's unapproved Infrastructure Development Plan 2005-15.

51. The Single Living Environment Accommodation Precinct (Single LEAP) project is a separate initiative to address living-in accommodation shortfalls across Defence. Should the Government's strategy for this project require new permanent living-in accommodation to be built at Kokoda Barracks, there would be cost and timing advantages in leveraging the project management and contractual arrangements established for the redevelopment project. This approach would allow the required accommodation works to commence immediately following Government approval, providing improved accommodation in the shortest possible time.

### **CONSULTATION**

52. Discussions have been held, or are planned to be held, with the following organisations:

- Beaudesert Shire Council
- Environment Australia
- Gold Coast City Council
- Queensland Environment Department

53. Project staff has briefed the Federal Member for Forde.

## **PART B – TECHNICAL INFORMATION**

### **Scope of Works**

54. The works proposed for the redevelopment of Kokoda Barracks involve the construction of six new assets; extensions to four existing assets; upgrading of thirteen existing assets; occupational health and safety rectification of six assets; both new and upgraded infrastructure services; and the removal and disposal of about twenty-six redundant facilities.

55. As a proportion of the project budget estimate, about 40% of the cost of the proposed works is associated with living-in accommodation and messing; about 25% with office and training accommodation; about 20% with the upgrading of the services infrastructure; and about 5% with information systems infrastructure. General refurbishment of support facilities accounts for the remaining 10% of the budget estimate.

56. Refurbishment of existing buildings would include repairs and maintenance, rectification of occupational health and safety deficiencies, and the general upgrading of finishes. Upgrading of building services would include compliance with building codes and standards and the provision of Building Management Systems to enable monitoring of energy use by individual building where this is appropriate.

### **Site Planning, Selection and Description**

57. All the proposed works are within Kokoda Barracks. This property is Commonwealth owned and Defence controlled. The redevelopment does not require the acquisition of additional land.

58. A Master Plan Study completed in 1997 provides a general framework within which development projects at Canungra can be considered. A draft Zone Plan forming part of the Master Plan Study has recently been reviewed. The draft Zone Plan meets the principles reiterated in Army's draft Strategic Planning Guidance for Canungra. The locations for new facilities are in accordance with the draft Zone Plan.

### **Zoning and Approvals**

59. All the facilities referred to in this evidence are, or would be constructed, within the boundaries of Kokoda Barracks which is designated “Defence Special Purposes”. No civilian authority design or construction approvals are required, although works will comply with relevant Standards and Regulations as applicable.

### **Codes and Standards**

60. Where appropriate, the design and construction of the proposed works and services would conform to the relevant sections of the following:

- a. Building Code of Australia
- b. Australian Standards and Codes;
- c. Commonwealth and State legislation;
- d. Defence Manual of Fire Protection Engineering;
- e. Defence Facilities Communications Cabling Standard; and
- f. Defence security publications.

61. A qualified and practising certifier would be required to certify that the design and the finished construction of the proposed facility meets the requirements of the Building Code of Australia, relevant Codes and Standards, the Defence Manual of Fire Protection Engineering, and any additional State, Local Government and Defence requirements.

62. The successful tenderer would be required to produce a Quality Plan. This plan will clearly show how building codes, Australian Standards, and any additional Defence requirements in relation to security, fire protection, and fire safety would be met and how the required standards would be maintained.

### **Provision for Disabled**

63. Access and facilities for the disabled would be provided in accordance with the Building Code of Australia, Australian Standards, and the Defence Estate Management Guide “*Disabled Access and Other Facilities for Disabled Persons*”.

### **Provision for Child Care**

64. An occasional childcare centre already exists at Kokoda Barracks and has sufficient capacity to accommodate the requirements of staff at Kokoda Barracks.

### **Occupational Health and Safety**

65. The proposed facilities would comply with the requirements of the *Occupational Health and Safety (CE) Act 1991*, the Department of Defence Occupational Health and Safety Manual and relevant Queensland Government Occupational Health and Safety legislation, and operate in accordance with an approved Occupational Health and Safety Plan.

66. All the proposed redevelopment activity would occur within Kokoda Barracks and no special or unusual public safety risks have been identified.

### **Philosophy Adopted for Precautions against Legionella**

67. Air-conditioning systems will be air-cooled and no specific precautions against the Legionella Bacillus are therefore considered necessary.

### **Energy Conservation Measures**

68. The Commonwealth Government is committed to Ecologically Sustainable Development (ESD) and the reduction of greenhouse gas emissions. Defence reports annually to Parliament on its energy management performance and on its progress in meeting the energy efficiency targets established by the Government as part of its commitment to improve ESD. This project addresses this policy by adopting cost effective ESD as a key objective in the design, development, and delivery of new and refurbished facilities.

69. Preliminary design development has included an analysis of energy consumption that could be anticipated from the implementation of the proposal. The energy efficiency of new and refurbished buildings will be audited within twelve months of occupancy.

70. The preliminary design of new and refurbished facilities has considered the feasibility of the following measures to reduce energy consumption in a cost effective manner:

- a. orientation to sun and prevailing winds for temperature control and lighting;

- b. insulation and weatherproofing;
- c. solar energy and solar hot water systems;
- d. gas-fuelled heating systems;
- e. geothermal air conditioning;
- f. energy efficient lighting and appropriate lighting control systems;
- g. energy efficient plant and equipment;
- h. zones within facilities to control energy use; and
- i. Building Management Systems as part of an area-wide energy management strategy.

### **Planning and Design**

71. The general philosophy adopted for the design of new and upgraded facilities would include the following considerations:

- a. development of a utilitarian facility that is fit for purpose;
- b. use of existing infrastructure wherever possible to reduce capital costs;
- c. compliance with all relevant building codes and construction standards;
- d. use of conventional construction techniques;
- e. design and construction that complies with all relevant security standards and security accreditation requirements;
- f. design and construction appropriate for local climatic conditions;
- g. design and construction that achieves positive through-life cost benefits; and
- h. design that is in sympathy with the existing built environment.

### **Structure**

72. Proposed new facilities, including extensions to existing facilities, would generally be single-storey steel or reinforced concrete framed structure with concrete floor slabs, brick faced or equivalent external walls, and a metal roof appropriate to the environment. The structural design would provide control of cracking of concrete and masonry and incorporate structural tolerances. Internal walls would generally be non-load bearing frames lined with plasterboard to provide for maximum flexibility in future floor layout. In particular, structural design would take account of the highly reactive soils and high rainfall levels encountered in the Canungra area.

**Materials and Finishes**

73. Materials and finishes would be selected from those readily available locally for their functionality, durability, and low maintenance and for their ecologically sustainable design properties.

**Mechanical Services**

74. New, extended, and upgraded facilities will generally be air-conditioned and the selection of building services and associated equipment would be required to achieve an economic balance between capital cost and operation and maintenance costs. Selection would be based upon a life cycle costing analysis and particular consideration would be given to energy efficient design solutions employing passive solar energy. New, refurbished and extended facilities would incorporate building management systems, metering, and other provisions to measure and monitor energy use and to allow regular energy audits where practicable. Mechanical plant would have a level of spare capacity and incorporate a modular and multiple control approach to ensure flexibility.

**Hydraulic Services**

75. New and extended facilities would connect to the upgraded water and sewage infrastructure within Kokoda Barracks.

**Electrical Services**

76. Lamps would be high efficiency fluorescent, compact fluorescent or discharge type and lighting would include sensor controlled lighting to intermittently occupied areas.

**Fire Protection**

77. The design of the fire protection systems would comply with the Defence Manual of Fire Protection Engineering.

**Security**

78. In accordance with Government initiatives to improve physical security arrangements in Government departments generally, advice from designated security authorities would be incorporated into the design solutions for the proposed facilities as appropriate. The security threat assessment would be reviewed during the detailed



design phase and the facilities would be secured as appropriate to the activities conducted. The highest security classification for the facilities covered by these proposals is expected to be 'Secret'.

### **Civil Works**

79. None of the probable sites for new or extended facilities present any particular civil engineering problems, but each would be the subject of further survey and geotechnical investigation during the design phase.

### **Landscaping**

80. The redevelopment proposals would not cause any substantial change in the essential character of existing facilities. Landscaping works would be directed towards the restoration of areas disturbed during construction and general improvement of the built environment. Precautions would be taken to avoid compromising existing environmental sensitivities by adopting landscaping practices in keeping with local environmental conditions.

### **Project Delivery System**

81. The delivery system proposed for the project is *Managing Contractor*. A Project Manager/Contract Administrator will also be appointed. The Managing Contractor arrangement will provide the benefit of a large construction firm managing design and construction, while promoting access for local small to medium enterprises through sub-contract design and construction trade packages. Additionally, this arrangement would permit closer coordination of a number of individual works to ensure that Kokoda Barracks remains operational.

### **Associated Drawings**

82. Attachments 3 through 17 provide preliminary concepts for the major proposals outlined in this evidence.

ATTACHMENTS

1. Base Location Plan
2. Redevelopment of Kokoda Barracks – Base Plan
3. Building B2 Ground Floor– Preliminary Proposal
4. Building B2 – Preliminary Proposal
5. Building A1 – Preliminary Proposal
6. Building A1 – Preliminary Proposal
7. Building N3 – Preliminary Proposal
8. Building N3 – Preliminary Proposal
9. Building N8/N9 – Preliminary Proposal
10. New Weights Hall – Preliminary Proposal
11. Building N21 – Preliminary Proposal
12. Building N21 – Preliminary Proposal
13. Building N22 – Preliminary Proposal
14. Building N22 – Preliminary Proposal
15. Building B40 – Preliminary Proposal
16. Building B40 – Preliminary Proposal
17. Entry Precinct – Preliminary Proposal