

Parliamentary Standing Committee on Public Works

REPORT

relating to the

FACILITIES FOR AN INCREASED ARMY PRESENCE IN THE NORTH (APIN) STAGE 2

(Ninth Report of 1995)

THE PARLIAMENT OF THE COMMONWEALTH OF AUSTRALIA
1995

The Parliament of the Commonwealth of Australia
Parliamentary Standing Committee on Public Works

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(APIN) STAGE 2**

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**MEMBERS OF THE PARLIAMENTARY STANDING COMMITTEE
ON PUBLIC WORKS**

(Thirty-First Committee)

Mr Colin Hollis MP (Chair)
Senator Paul Henry Calvert (Vice-Chair)

Senate

Senator Bryant Robert Burns
Senator Shayne Michael Murphy*

House of Representatives

Mr John Neil Andrew MP
Mr Raymond Allen Braithwaite MP
Mr Russell Neville Gorman MP
Mr Robert George Halverson OBE MP
Hon. Benjamin Charles Humphreys MP

*replaced Senator John Devereux on 10 February 1995

**SECTIONAL COMMITTEE ON FACILITIES FOR AN INCREASED
ARMY PRESENCE IN THE NORTH (APIN) STAGE 2**

Mr C Hollis MP (Chair)
Mr R Halverson OBE MP (Vice-Chair)
Mr R Braithwaite MP
Hon B Humphreys MP

Committee Secretary: Peter Roberts

Inquiry Secretary: Denise Denahy

Secretarial Support: Mahesh Wijeratne

**EXTRACT FROM THE VOTES AND PROCEEDINGS OF
THE HOUSE OF REPRESENTATIVES**

No. 113 dated Wednesday, 7 December 1994

**PUBLIC WORKS—PARLIAMENTARY STANDING
COMMITTEE—REFERENCE OF WORK—INCREASED
ARMY PRESENCE IN THE NORTH (APIN) STAGE 2**

Mr Walker (Minister for Administrative Services), 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: Increased Army presence in the North (APIN) Stage 2.

Question - put and passed.

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS

FACILITIES FOR AN INCREASED ARMY PRESENCE IN THE NORTH (APIN) STAGE 2

By resolution on 7 December 1994 the House of Representatives referred to the Parliamentary Standing Committee on Public Works for consideration and report the facilities for an increased Army presence in the North (APIN) Stage 2.

THE REFERENCE

1. The proposal is to provide suitable working, training and accommodation facilities for units relocating to Darwin under APIN Stage 2 and represents the final stages of the facilities project to accommodate an increased Army presence in the north at an estimated outturn cost of \$264m.
2. It is proposed to construct additional facilities at Robertson Barracks and to construct additional ammunition storage facilities at Marrara Swamp, RAAF Base Darwin.
3. Some additional common user facilities for all units using Robertson Barracks as well as facilities for transiting units are also proposed.

THE COMMITTEE'S INVESTIGATION

4. On 2 March 1995 the Committee appointed a Sectional Committee comprising Mr C Hollis MP, Mr R Braithwaite MP, Mr R Halverson OBE MP and the Hon B Humphreys MP to undertake this inquiry.
5. On Wednesday 5 April 1995 the Sectional Committee inspected the proposed site as well as existing facilities at Robertson Barracks.
6. The Committee received a written submission from the Department of Defence (Defence) and evidence was taken from its representatives at a public hearing held in Darwin on Thursday 6 April 1995.
7. The following individuals and organisations also presented submissions and representatives appeared before the Sectional Committee at the public hearing:

- . Mrs N Padgham-Purich MLA (represented by Ms Kezia Purich)
- . a group of Darwin Residents
- . Palmerston Town Council
- . Aircraft Noise Abatement Group
- . Gwalwa Daraniki Association Incorporated
- . Mr D G Burke, MLA

8. A further public hearing was held in Canberra on Thursday 20 April 1995 at which Defence and the Returned and Services League (RSL) appeared before the Committee.

9. Submissions were also received from:

- . Australian Nature Conservation Agency
- . Australian Council of National Trusts
- . Energy Conservation Systems Pty Ltd
- . Commonwealth Department of Primary Industries and Energy
- . Childcare at Work
- . Environment Protection Agency
- . Commonwealth Fire Board
- . Darwin City Council
- . Defence Housing Authority
- . Australian Heritage Commission
- . NT Department of Health and Community Services
- . Northern Territory Government (NT Government)

10. A list of witnesses who gave evidence at the public hearings is at Appendix A. The Committee's proceedings will be printed as Minutes of Evidence.

BACKGROUND

11. In 1987 the then Minister for Defence tabled in Parliament the policy information paper *The Defence of Australia, 1987* which outlined the Government's defence policy for Australia and became the basis for future defence planning. The policy required Army to develop mobile ground forces able to defeat enemy incursions at remote localities, and a capability to sustain operations remote from logistic support centres. In particular, the paper stated that "2nd Cavalry Regiment, a reconnaissance unit currently located at Holsworthy, will be relocated to Darwin". The paper also stated that: "... The Government has directed that further detailed studies commence on the possible relocation of an Army brigade to the north".

12. In 1989 a 700 hectare property was acquired 20 kilometres east of Darwin, near Palmerston, as the site for the new Army barracks to accommodate the 2nd Cavalry Regiment. Construction of that unit's facilities was considered by the Committee in May 1989 (Report 1989/12). The construction of facilities for the 2nd Cavalry Regiment has been completed and all personnel from that unit were relocated to Darwin by March 1993.

13. On 30 May 1991 the then Minister for Defence announced the details of the Defence Force Structure Review, which included the permanent basing of a Regular Army brigade in Darwin. In particular he stated that an armoured regiment of one Regular Army tank squadron, logistic support elements and an aviation squadron would relocate to Darwin by 1995, followed by an infantry battalion by 1998. In response to that guidance, Army developed a three phase plan, which was endorsed by Defence on 14 May 1992, for the relocation of designated units to the Northern Territory:

Phase 1 - Initial Presence (1992 - 1993). The relocation of 2nd Cavalry Regiment and a tank troop. (Facilities for Phase 1 have been completed and the 2nd Cavalry Regiment occupy these facilities).

Phase 2 - Interim Presence (1994 - 1997). The move of 1st

Armoured Regiment, 161st Reconnaissance Regiment (aviation), Headquarters 1st Brigade, 104th Signals Squadron, and associated support units. The facilities for these units are to be provided under APIN Stage 1 and are to be completed by the end of 1997. The Committee examined the APIN Stage 1 proposal in August 1992 (Report 1992/10). The construction of facilities for APIN Stage 1 is progressing satisfactorily and is currently ahead of schedule. (Facilities are due for completion in 1997-1998).

Phase 3 - Enhanced Presence (1998 - 2001). This phase involves the relocation to Robertson Barracks of 1st Brigade Administrative Support Battalion, 1st Combat Engineer Regiment, 5th/7th Battalion, Royal Australian Regiment (Mechanised), 103rd Medium Battery and base logistic support elements of Army Support Unit - Darwin. The facilities for these units are to be provided under APIN Stage 2 and are to be completed by the end of 2001.

Options Considered

14. The Government, in the policy information paper *The Defence of Australia 1987*, directed that further detailed studies on the possible relocation of an Army brigade to the north be conducted. The studies considered four alternatives for increasing Army's presence in the north, namely:

- permanent basing of an existing or newly raised brigade in Darwin
- permanently basing in Darwin a lesser formation than a brigade, based on 2nd Cavalry Regiment and a second major unit, with limited arms and services support
- conducting regular collective training throughout the north, with the permanent basing of additional minor units in the north, in addition to Headquarters Northern Command, Regional Force Surveillance Units and 2nd Cavalry Regiment
- rotation of southern based units through permanent northern bases.

15. The results of the study were included in the Defence Force Structure Review which concluded that the permanent basing of a brigade in Darwin was the alternative that most appropriately met the Government's strategic objectives.

THE NEED

16. The Committee was advised that APIN is part of an overall Defence move to the north which encompasses the activities of the three services. Defence stressed that APIN is not about the defence of Darwin, but about the defence of Australia. Suitable facilities need to be provided to enable the relocation of units under APIN Stage 2 to take place. Currently there are no Defence facilities in Darwin of suitable size, function or location capable of meeting the requirements of a brigade-sized force.

17. In 1989, the site now known as Robertson Barracks was acquired to accommodate initially the 2nd Cavalry Regiment and subsequently other 1st Brigade units. It is proposed that all APIN units, except the aviation unit, be located within Robertson Barracks. Facilities for the aviation unit are currently being constructed at RAAF Base Darwin.

18. The RSL questioned the need for a battalion to be permanently based in Darwin. Army stressed that this matter has been addressed in defence strategic planning and it is considered unacceptable to have the first brigade split between Sydney and Darwin. Defence advised that a mechanised battalion requires armoured personnel carriers. Were these personnel carriers based in the south and moved to Darwin when and if the need arose, then it would require a huge airlift effort which would consume Defence's total resources.

19. The RSL also questioned the need for personnel to become acclimatised for operations in the tropics, as troops are able to be trained in Townsville and exercises are able to be held in training areas of northern Australia. Defence advised that although exercises are frequently held in the north these do not allow soldiers to adequately acclimatise even for relatively short periods in this environment. These exercises have proven that the units based in the Darwin area are more familiar with the rigours of operating under these conditions than those from the south. The Committee was advised that during the Northern Predator exercises held in 1994 in the Northern Territory, there were over 30 heat-related casualties from southern-based forces compared with zero related casualties from the Northern Territory-based forces. Darwin-based units also have a

significantly lower rate of equipment failures and lower maintenance costs than southern-based units which exercise in this region.

Committee's Conclusions

20. The Committee agrees that the APIN Stage 2 project is a necessary part of a wider strategy for the defence of Australia.

21. A need therefore exists to provide suitable working, training and recreational facilities, living-in accommodation and messes for units relocating to Darwin under APIN Stage 2.

THE PROPOSAL

22. It is proposed to relocate 1 104 Defence personnel and an estimated 1 257 dependants to Darwin under APIN Stage 2 over the period 1997 to 2001.

23. The units relocating are:

- . elements of 1st Brigade Administrative Support Battalion (1 BASB)
- . 1st Combat Engineer Regiment (1 CER)
- . 5th/7th Battalion, Royal Australian Regiment (Mechanised) (5/7 RAR (Mech))
- . 103rd Medium Battery (103 Mdm Bty)
- . Logistic Support Company of Army Support Unit - Darwin (Log Spt Coy, ASU-D).

24. It is proposed to:

- . construct additional facilities at Robertson Barracks
- . purchase, lease and construct additional married quarters to be managed by the Defence Housing Authority (subject of a separate hearing by the Committee)
- . construct three additional ammunition storage facilities at

Marrara Swamp, RAAF Base Darwin.

25. Some additional common user facilities for all units using Robertson Barracks as well as facilities for transiting units are also proposed. The new facilities will optimise the use of shared facilities and will retain flexibility in design to cater for any future restructuring or change to unit establishments.

Location

26. The location for the brigade had effectively been decided by the acquisition in 1989 of the 700 hectares Robertson Barracks site for 2nd Cavalry Regiment.

27. Robertson Barracks is located approximately five kilometres north of Palmerston and 20 kilometres south-east of Darwin.

28. The Committee queried the possibility of contamination on the site. Defence advised that when the site was acquired, it had just started to be cleared for a rural residential type development which did not proceed. The NT Government and Defence environmental officials assessed the possible risks associated with the site, and concluded that no specific contamination surveys were required.

29. Provision of facilities for APIN Stage 2 units will be in accordance with the Robertson Barracks Zone Plan.

Facility Requirements

30. The facilities for APIN Stage 2 are to be similar in construction to those provided for the 2nd Cavalry Regiment and those currently under construction for APIN Stage 1.

31. The major elements being provided by APIN Stage 2 are as follows:

- 1 Brigade Administrative Support Battalion (elements)
 - . Headquarters
 - . Administration Company
 - . Supply Company
 - . Transport and Combat Supplies Company
 - . Maintenance Company
 - . Military Police Platoon

1 Combat Engineer Regiment

- . Headquarters
- . Field Squadron
- . Support Squadron
- . Workshops

5/7 Royal Australian Regiment (Mech)

- . Headquarters
- . 3 x Mechanised Companies
- . Support Company
- . Technical Support Company
- . Administration Company

103 Medium Battery

- . Log Spt Coy, ASU - D
- . additional Other Ranks Living - In Accommodation
- . additional SNCO Living - In Accommodation
- . additional Officer Living - In Accommodation
- . extensions to the SNCO Mess

- . religious centre

- . transit camp

- . outdoor training facilities
- . outdoor physical fitness / recreational facilities

- . civil engineering / electrical services / communications and infrastructure

- . ammunition storage and inspection facilities (at RAAF Base Darwin)

- . sick quarter wards

- . museum.

32. Further details may be found at Appendix C.

Childcare Facilities

33. The Committee queried the lack of provision of childcare facilities on base. Defence advised that no firm decision has been made on whether the facility will be located at Robertson Barracks or be located off-base. The precedent exists in Townsville to have the facility off-base within the community. This matter will be further examined as the proposal is developed.

Museum

34. There is currently no Army Museum in Darwin. Defence advised that an Army Museum in Darwin would improve community awareness and involvement with the Army. The benefits would also include an historical focus and the development of an "esprit de corps" among soldiers posted to Darwin.

35. A submission received from Mrs Padgham-Purich advised that the Royal Australian Artillery Museum at East Point contains an interesting collection of war time memorabilia which is easily accessible by the public and another military museum is therefore unnecessary.

36. Defence advised the Committee that it did not see the aims of the proposed museum conflicting with the museum at East Point, but saw the opportunity for cooperation and exchange of items of collection. The Committee was advised that Army volunteers would work during lunch hours and after normal working hours. It is therefore necessary for the museum to be located close to the volunteers' place of work. The actual operating costs would be minimal and generally limited to fuel, light and power and building maintenance costs.

Close Training Area

37. A Close Training Area (CTA) is being provided as part of APIN Stage 1.

38. A CTA is required within close proximity to the brigade for the conduct of basic individual military skills training. Training includes field craft and minor tactics training, deployment drills as well as physical and psychological development on obstacle and confidence courses. Training activities are primarily conducted on foot. However, the limited use of

vehicles will be necessary for specific elements of the training.

39. The expansion of the cantonment at Robertson Barracks will reduce the size of the existing close training area, thus requiring the acquisition of additional land.

40. Defence is currently negotiating with the NT Government for the acquisition of land to the east of Robertson Barracks. The land is owned by the NT Government, and is zoned as "Extractive Industries". Portions are currently leased to quarry operators. Acquisition by Defence will be conditional on allowing continuation of mining (quarrying) activities in association with Army's training requirements. An Occupational Licence, which allows training on the area has been issued by the NT Government. Acquisition is expected to be finalised within 12 months.

Married Quarters

41. A condition of service is that married quarters are provided for all married personnel. Married quarter size and design guidelines reflect comparable community standards. The relocation of approximately 2 285 Service personnel and an estimated 2 600 dependents as a result of the APIN project will require an additional 1 022 married quarters in the Darwin area. The APIN Stage 2 requirement for married quarters is approximately 500. The Defence Housing Authority is responsible for the purchase, lease and construction of sufficient married quarters to meet the APIN requirements. The purchase of married quarter furniture by Defence is included as an element of this proposal.

42. Wherever possible married quarters will be dispersed throughout existing residential areas to assist the integration of Service families into the local community, reduce demands for community services development, and distribute economic multipliers throughout the Darwin area. Married quarters will not be constructed within Robertson Barracks.

43. It is proposed to purchase, lease and construct additional married quarters to be managed by the Defence Housing Authority (subject of a separate hearing by the Committee) at Palmerston. DHA has received approval to construct houses at HMAS *Coonawarra* (Report 1995/8).

Marrara Swamp

44. Concern was expressed by the Aircraft Noise Abatement Group, a

group of Darwin residents and the Gwalwa Daraniki Association over the storage of ammunition at Marrara Swamp at RAAF Base Darwin. Defence advised the Committee that Army holds only three months supply of training stocks of ammunition at Marrara Swamp. Defence stressed that all storage at Marrara Swamp is in accordance with the United Nations hazardous goods classification procedures and NATO safety principles. All safety arcs are therefore retained within the Commonwealth property boundary, even though some of these arcs are not obliged to be contained within these boundaries. Defence advised that it therefore has a greater safety factor than that required under the NATO safety principles.

45. Larger stocks of ammunition will not be held at Marrara Swamp, but will be located at places such as Tindal in the NT and Myambat, the Army's wholesale ammunition depot in NSW. Should large stocks of ammunition need to be moved in a contingency situation, then they would go straight from Myambat to an operational area under field storage. Defence stressed that it has no intention of holding large stocks of ammunition at Marrara Swamp. The present proposal to build three additional storehouses will complete an earlier proposal which completes a ring of explosive ordnance storehouses.

46. The submission received from a group of Darwin Residents expressed concern over the transportation of ammunition to Marrara Swamp. Defence advised that the question of transporting ammunition was investigated as part of the Mount Bunday environmental impact statement. The Mount Bunday Training Area is a 1 170 km pastoral lease approximately 120 km south-east of Darwin and was acquired as a Crown Perpetual Lease in March 1989 as a field training area for NORFORCE. Environmental clearance was given for its use by NORFORCE on the basis that such activities did not have a significant environmental impact. Concern had been expressed that the Army would be driving ammunition trucks between Darwin and Mount Bunday. The outcome of this investigation was that the probability estimates for an event involving an accident with an ammunition truck being involved was highly unlikely. An accident would not necessarily result in an explosion, as service explosives, by their very nature, are inherently stable and very difficult to detonate and would not be fused during such transportation activities. The probability of there being a vehicle accident followed by a detonation was assessed as being very remote.

47. Concern was also expressed over the transportation of fuel. Defence advised that most of its vehicles use diesel fuel and only small quantities of petrol will be transported. The Committee was advised that there would not

petrol will be transported. The Committee was advised that there would not be any greater degree of risk for a transportation accident involving a tanker truck than there would be with normal risks to which the public are exposed every day on the roads.

Committee's Conclusion

48. The Committee notes that all storage of ammunition at Marrara Swamp, RAAF Base Darwin is in accordance with the United Nations hazardous goods classification procedures and NATO safety principles.

Scope of Works

49. As Robertson Barracks is a "green field" site all works will be new construction. Building styles, details and materials will generally replicate those of the 2nd Cavalry Regiment/APIN Stage 1 facilities in order to reduce design, development, construction and maintenance costs. The continued use of pre-finished, low maintenance materials, lightweight construction, standardisation of fixtures and fittings and an emphasis on energy efficiency and conservation will assist in reducing construction and operating costs.

50. The Zone Plan has made allowances for the construction of facilities for additional units. Similarly, Master Planning makes allowance for the possible need for further development in the long-term. Facilities are to be of a design and construction that does not limit future expansion if required. For planning purposes all facilities allow for 30% expansion potential in office accommodation and 50% in Q-store, workshop, and vehicle compound areas. Where it is anticipated that there is a strong possibility that facilities will be required to meet a predicted expansion requirement, eg. expansion of the medium battery into a medium regiment, then for planning purposes, the final requirements will be allowed for in designs, although only the currently approved requirements will be provided as part of this project.

Delivery Options

51. A risk analysis conducted for the APIN project in 1992 identified that delivery systems required the following major characteristics:

- the flexibility to change the order of elements within the project to meet changes in priorities

- . the ability to manage time within the project, and ensure the timely delivery of project elements
- . the ability to coordinate numerous elements of the total project at all stages of development and construction
- . the ability to manage the project budget/contingency and react to project and industry needs or funding fluctuations.

52. Other considerations that influence the delivery system options are:

- . Departmental policy is to encourage open competition, thereby providing an opportunity for local industry operators to be involved, although not at the expense of "value for money"
- . Defence is now not tied to Australian Construction Services which was the manager for the 2nd Cavalry Regiment works.

53. The required delivery system characteristics, as identified by the risk analysis, can best be provided through either a Project Management or a Managing Contractor delivery system, with the project being broken down into component elements. Following consideration of the issues and a construction industry workshop held in Darwin on 9 September 1994, it was determined that Project Management be the delivery strategy for APIN Stage 2. The management of contract or sub contract packages provides the required flexibility to manage changes in budget and time.

54. A two stage tender process will be used to select consultants and contractors in accordance with the selected acquisition strategy. Tender responses will be administered in accordance with Defence policy and Construction Industry Development Association recommended practices.

55. In response to concerns expressed by Senator Tambling at the public hearing over the tendering process, Defence advised that the Commonwealth's purchasing policy is undergoing change at present and there will be increasing emphasis on providing opportunity for regional industry and small business. This is an issue which Defence will address in the next invitation to register interest exercise. Defence stressed that everyone is given the opportunity to bid for work. The final decision on tender lists is made in Canberra. Select tender lists which have been established, have a validity of only two years and then are opened to enable all interested parties to bid again. Defence intends to carry out this exercise

established, have a validity of only two years and then are opened to enable all interested parties to bid again. Defence intends to carry out this exercise in the second half of 1996 and the changes to government purchasing policy will be taken into account as the exercise is performed. The Committee was advised that the project manager debriefs unsuccessful tenderers, both for construction work and consultancy work.

56. In response to a query from the Committee, Defence advised that it is a requirement that all consultants and contractors who tender, submit details of the quality assurance system which they have within their organisation. However, Defence informed the Committee that it is difficult to make this a requirement of all subcontractors when many are two-person operations. The head contractor, however, is required to have a quality assurance system and all of the subcontractors work within the overall umbrella of that system. This process is monitored and audits carried out of consultants and contractors to ensure that their quality assurance systems are working effectively.

57. Defence advised the Committee that it is necessary for a contractor to declare that subcontractors have been paid before progress payments are advanced. The Committee was advised that a Defence Industry Awareness course is conducted annually in Darwin and this raises considerable executive interest. The Defence Industry Liaison Council meets with local industry three to four times a year and advises on defence activities. Advice on construction activities is also passed on at these meetings. The NT Department of Industries and Development also conducts an information seminar one Friday each month. Defence has had involvement in the Centre for Social Research where it is explained to contractors how to conduct business with Defence.

58. At an informal meeting of 85 small contractors held this year, Defence explained the mechanisms of defence contracting and how business is conducted with the department. Defence advised that it intends to conduct another industry seminar in Darwin in 1996.

Committee's Conclusion

59. **The Committee commends the Department of Defence on its willingness to hold discussions with contractors and conduct seminars explaining how business is conducted with the department.**

Committee's Recommendation

60. The Committee recommends that the Department of Defence continues to include in its contract documents a clause stating that subcontractors must be paid before progress payments are made to contractors.

Through-Life Options

61. Designs, materials, equipment and energy systems which might deliver economies on a life cycle costing basis will be considered. Particular attention will be given to energy efficiency and conservation, including considerations of building orientation, thermal stability, wind effect, landscaping, climate, natural lighting and natural ventilation. The final design for each structure will take maximum advantage of the site and incorporate all economies possible with regard to floor area and construction, whilst retaining the necessary functional requirements and work flow pattern.

62. At the time of each development review (15%, 50%, and 90%), the designer is to provide estimates for maintenance costs for each facility, as well as energy budgets for each facility.

63. In selection of the services and associated equipment, the capital/installation cost is to be balanced against operation and maintenance costs. All structures are to have a design life of no less than 50 years. Services are to have a design life of no less than 20 years.

Master Planning Considerations

64. The future development of Robertson Barracks will be of a similar nature to that which has already occurred for the 2nd Cavalry Regiment. To ensure continuity, functionality and economy of the development, the entire Robertson Barracks area has been zone planned to meet the total brigade requirements. Buildings and services will be provided in accordance with the principles contained in the *Design Philosophy Report*, prepared for the Department of Defence by Australian Construction Services in October 1992.

65. The further development of Robertson Barracks as a brigade cantonment under APIN has been the subject of a detailed Master Planning exercise. A *Master Plan Report*, encompassing requirements for the 2nd

Cavalry Regiment and APIN Stage 1 projects, was prepared by Australian Construction Services in response to Defence instructions. Australian Construction Services produced another report on *The Further Development Of The APIN Master Plan*, as more detailed requirements for APIN Stage 2 became available. This supplementary report was completed in May 1994. The Master Plan Reports will be the foundation for the future development and are based on broad principles which may be found at Appendix D.

BUILDING DESIGN, ENGINEERING SERVICES AND LANDSCAPING

Design Philosophy

66. Building forms in the barracks area will be simple and energy efficient, recognising the tropical environment. Low rise construction will be used to complement and blend with the landscape. Construction materials and colours will harmonise with the local environment and include masonry and/or colour bonded metal claddings, appropriate to the functions of the building.

67. Landscaping will retain a maximum of the existing vegetation, supplemented by planting to enhance the natural features. The landscaping plan will prevent roads and car parks becoming dominant and unsightly features of the development.

68. Further details on building design may be found at Appendix E.

Cyclone and Earthquake Considerations

69. The Committee queried the earthquake rating and cyclonic conditions for the area. Defence advised that the latest version of the Australian Standard (1170.4) no longer refers to severity zones, but refers to earthquake hazard maps and acceleration coefficients which are basically the factors that determine the rate at which a building shakes during an earthquake. Defence advised that strengths built into the structures will withstand cyclonic and earthquake conditions in the area.

70. Defence advised that approximately 80% of cyclones in the Darwin area are in the categories 1 to 2, with the notable exception of Cyclone Tracy which was a category 4 cyclone. All Defence buildings are constructed to the wind loading code and structural code requirements for

requirements for areas susceptible to cyclones. Cyclone shelter is to be provided in the Other Ranks Messes for all personnel living in the barracks. Personnel living off-base will seek protection, with their families, in the shelters provided in married quarters or in public shelters in the vicinity of their residence. All newly constructed DHA houses in Darwin have a cyclone shelter built in them.

71. Both Other Ranks Messes are designed as Post Disaster Category B facilities to serve living-in personnel.

72. To meet the operational requirements of the barracks, the Command, Operations and Communications Centre functions (and associated ablutions) of the Brigade HQ are being constructed as Category A accommodation so that they can survive and continue to function during a cyclone.

73. All remaining facilities will be designed to meet the requirements of the Standards Association of Australia Wind Loading Code.

74. In response to a query from Mrs Padgham-Purich concerning the availability of the cyclone shelters to the public, Defence advised that the NT Government has provided cyclone shelters in Palmerston for residents of Palmerston and the surrounding rural areas. Residents are encouraged to go to these shelters well before the cyclone reaches maximum intensity. Defence advised that, notwithstanding Army's inability to provide guaranteed access to cyclone shelters, nobody would be turned away from facilities in Robertson Barracks if a cyclone was imminent.

MECHANICAL ENGINEERING SERVICES

Sewerage

75. Concern was expressed by some submissions that there could be overflow from the sewerage system. Defence advised that it has a very comprehensive system in place. All of the main services were built in the early days of APIN Stage 1. Because the site is fairly flat by nature, it relies heavily on a mixture of gravity and rising mains. Manholes and pump pits are strategically positioned around the site. All are sealed and there is more than sufficient capacity to cope with the upper estimates of the eventual size of the barracks.

76. Further details concerning mechanical engineering services may be found at Appendix F.

ENVIRONMENTAL CONSIDERATIONS

Environmental Protection

77. The *Notice of Intention (NOI), Facilities and Training Area, 2nd Cavalry Regiment, Darwin, Northern Territory*, dated September 1987, was prepared for the relocation of the 2nd Cavalry Regiment to Darwin. On 23 November 1987, the Minister for the Environment issued environmental clearance for the development of facilities for 2nd Cavalry Regiment. The proposed facilities for APIN Stage 2 are consistent with those foreshadowed by the 2nd Cavalry Regiment NOI and do not represent a change in land use.

78. The *Notice of Intention for an Increased Army Presence in the North, APIN Stages 1 & 2*, was submitted to the Department of the Environment, Sport and Territories for assessment on 25 October 1993.

79. The sociological conclusions reached in the NOI for APIN 1 and 2 may be found at Appendix G.

80. On 16 March 1994 the Commonwealth Environment Protection Agency (CEPA), on the basis of information provided in the NOI, cleared the APIN Stage 1 and Stage 2 projects. CEPA further advised that neither an Environment Impact Statement nor a Public Environment Report is required for the project.

81. Under APIN Stage 2 the potential to adversely affect the natural environment is limited to the construction and operation of Robertson Barracks. Mitigation measures and safeguards have generally been identified in the above documents as well as the Department of Defence - Army, Palmerston Barracks, Design Philosophy Report, prepared by Australian Construction Services in October 1992.

82. The Committee queried whether explosives should be stored at Marrara Swamp, which is an environmentally sensitive area. Defence advised that the nature of the activity of explosives storage is one which actually contributes to the preservation of the environment, because it is not an area where people are permitted. There is restricted access at Marrara Swamp and much of the area is fallow ground. The ammunition is stored in earth-covered bunkers and activities there are negligible.

83. In response to concern expressed over possible flooding, Defence assured the Committee that the 100 year floodline skirts the western boundary of the site and all of the master plan developments have occurred at a higher level.

Landscaping

84. The philosophy and existing production of landscaping in the 2nd Cavalry Regiment facilities is to be extended and enhanced into the further development of Robertson Barracks.

85. Turfed areas, garden beds and shrubbery will be irrigated with pop-up sprinklers and fixed sprays respectively. Trees in open spaces should be on drip irrigation predominantly for establishment purposes.

86. Landscape Master Planning is to achieve a landscape that is entirely appropriate to its function, the site and to the "Top End". Where appropriate, areas of existing woodland will be retained and, if required, reinforced with species indigenous to the site.

Energy Conservation

87. Solar hot water heaters in the living accommodation blocks are to be controlled by local "one shot" booster switches. The energy management system is able to inhibit the operations of boosters during the morning, when a full day of sunshine is potentially available.

88. Air conditioning in the living accommodation blocks is to be controlled by a key switch that is matched to the room key. The energy management system is also able to inhibit operation of the air conditioners in the living accommodation blocks, on a management selective basis, during periods of good weather.

89. Windows will generally face north or south and will be provided with suitable sun control. Windows which face east or west will be suitably sun screened. Ventilation to living accommodation will maximise the use of louvres. All walls and roofs will be adequately insulated. Vapour barriers will envelop all air conditioned spaces and non air conditioned spaces will be sarked.

Heritage or Archaeological Sites

90. An archaeological survey was carried out in February 1989. On-site surveys, discussions with representatives of the local Aboriginal community and discussions with anthropologist Michael Southon were undertaken.

91. Two Aboriginal sites were located outside but adjacent to the Defence property during the survey. Both were camp sites represented by some scatters of artefacts. The sites were inspected by the Aboriginal representatives.

92. The conclusion of the survey report states, in part:

"The two archaeological sites located during the survey are small and in poor condition, and are probably well represented outside the base development area. Therefore, these sites are of minimal archaeological significance and their existence should not conflict with the development of the area as a military base. Furthermore no objections were raised to the development by the representatives of the local Aboriginal community."

ABORIGINAL SACRED SITES

93. A Sacred Site Avoidance Survey was carried out in February 1989. Research included visits to the site and surrounding areas and consultations with Aboriginal people who are custodians of the Darwin area. The report concludes:

"There are no sacred sites, or other sites of significance, within the development area. There may be a Brinkin* ceremony ground on the southern bank of Milners Creek. If so, it lies just outside the development area. There should be no disturbance of the south bank of Milners Creek."

* Brinkin is a tribal race.

94. As Milners Creek is entirely outside the boundaries of the site and as the "development site" referred to is the entire site purchased by the Commonwealth Government for the 2nd Cavalry Regiment and subsequent associated development, no further action in relation to Aboriginal Sacred Sites issues is anticipated.

95. Advice has been received from the Aboriginal Areas Protection Authority which states, inter alia "... I have had the opportunity to examine the report by Stone and Southon in 1989 and consider it to be an accurate assessment of sites in the region. The Authority has no records of Sacred Sites within the property boundaries as specified ...".

CONSULTATIONS

Joint Consultative Committee

96. The Joint Consultative Committee (JCC), established for the relocation of 2nd Cavalry Regiment to Darwin, is being continued to address the essential planning requirements of Stages 1 and 2 of the APIN project. The JCC has been restructured as a consequence of experience gained from the 2nd Cavalry Regiment project, and recent organisational changes in the Northern Territory administration and Commonwealth departments.

97. This ongoing consultative process, through the JCC, should ensure that the likely adverse impacts of APIN on the physical, natural, social and economic environment will be managed and minimised.

98. The Committee was advised that the JCC meets when a new proposal is being developed. Matters discussed include issues that have been identified in the various socioeconomic studies and the environmental assessment process which have been carried out.

Other Consultations

99. Consultations held by Army personnel implementing the APIN Project have included meetings with:

- . Department of Prime Minister and Cabinet - Office of Northern Development
- . Department of the Chief Minister
- . Darwin City Council
- . Palmerston Town Council
- . Litchfield Shire Council

- . Department of Education
- . Catholic Education Centre
- . Department of Health and Community Services
- . Defence Housing Authority
- . Department of Lands, Housing and Local Government
- . Department of Industries and Development
- . Department of Transport and Works
- . Conservation Commission of the Northern Territory
- . Power and Water Authority
- . Aboriginal Sacred Sites Authority
- . Aboriginal Areas Protection Authority
- . the Larrakia Aboriginal Community.

100. The Bowden Sexton Group has been engaged by Defence to review the public relations strategy. Considerable interviewing and gathering of information from various community groups was part of that review.

Attitudes Survey

101. Defence advised the Committee that it has undertaken a very extensive program of consultation, briefing and education in relation to the move to the north. A public relations strategy has been produced. In order to gauge the community's perception and concerns of the APIN project, and the impacts those concerns may have on the project, a consultancy was placed on "The Bowden Sexton Group" to conduct a survey into public attitudes to the project. The research included interviews with opinion leaders, focus groups, and quantitative investigations. Groups investigated ranged from administrators heading Government Departments in Canberra through to ethnic opinion leaders in Darwin.

102. The results from the attitudes survey indicated overall support for the APIN project. Defence advised the Committee that of the 500 Darwin residents canvassed, 90% knew of the Army's move to the north, and of those 90%, two-thirds had either very positive or positive support for the move.

103. The Committee queried the attitude of troops and their families in relation to being posted to the north. Defence advised that it found that there was almost an overwhelming enthusiasm for the move, not only from the soldiers but also from their families. However, there were a few families (less than 5% over the last two years) who had some reservations about the move. This was often due to personal reasons such as medical conditions or particular educational requirements.

FINANCIAL ASPECTS

104. The estimated outturn cost for APIN Stage 2 is \$264m.

105. The estimate is based on works already completed for the 2nd Cavalry Regiment project and on those elements of APIN Stage 1 currently under construction.

Committee's Recommendation

106. **The Committee recommends the construction of facilities for an increased Army presence in the North (Stage 2) at an estimated outturn cost of \$264m.**

CONCLUSIONS AND RECOMMENDATIONS

107. The conclusions and recommendations of the Committee and the paragraph in the report to which each refers to are set out below:

	Paragraph
1. The Committee agrees that the APIN Stage 2 project is a necessary part of a wider strategy for the defence of Australia.	20
2. <i>A need therefore exists to provide suitable working, training and recreational facilities, living-in accommodation and messes for units relocating to Darwin under APIN Stage 2.</i>	21
3. The Committee notes that all storage of ammunition at Marrara Swamp, RAAF Base Darwin is in accordance with the United Nations hazardous goods classification procedures and NATO safety principles.	48
4. The Committee commends the Department of Defence on its willingness to hold discussions with contractors and conduct seminars explaining how business is conducted with the department.	59
5. The Committee recommends that the Department of Defence continues to include in its contract documents a clause stating that subcontractors must be paid before progress payments are made to contractors.	60

6. **The Committee recommends the construction of facilities for an increased Army presence in the North (Stage 2) at an estimated outturn cost of \$264m.**

106



Colin Hollis MP
Chair

1 June 1995

APPENDIX A

WITNESSES

ADAMS, Commodore Harold John Parker, Member, National Defence Committee, Returned and Services League of Australia, Constitution Avenue, Campbell, Australian Capital Territory

BENNETT, Mr Stephen Charles, Town Clerk, Palmerston Town Council, 2 Chung Wah Terrace, Palmerston, Northern Territory 0830

BURKE, Mr Dennis Gabrielle, Member, Northern Territory Legislative Assembly, Parliament House, Darwin, Northern Territory

BURSTINGHAUS, Mr Paul David, APIN Stage 1 Project Manager, Connell Wagner Savant Joint Venture, PO Box 4, Palmerston, Northern Territory 0800

CLUNIES-ROSS, Major-General Adrian, Chairman, National Defence Committee, Returned and Services League of Australia, Constitution Avenue, Campbell, Australian Capital Territory

DUNN, Brigadier Peter James, Director, General Force Development (Land), Russell Offices, Canberra, Australian Capital Territory 2600

EASTER, Mr Bryan, Project Director, Accommodation and Works, Army, Campbell Park Offices, Canberra, Australian Capital Territory 2600

ELLIOTT, Mr David Charles, Elected Member and Deputy Mayor, Palmerston Town Council, 2 Chung Wah Terrace, Palmerston, Northern Territory 0830

EMERY, Ms Julie, Spokesperson, Group of Darwin Residents, 21 Philip Street, Fanny Bay, Northern Territory

GIBBONS, Colonel Peter Douglas, Chief of Staff/Deputy Commander, Northern Command, Larrakeyah Barracks, Larrakeyah, Northern Territory 0820

HOWELL, Ms Kerry, Coordinator, Aircraft Noise Abatement Group, PO Box 1604, Darwin, Northern Territory 0801

MARTIN, Mr Lex Stephen, Resident of Northern Territory, Unit 38, Coconut Grove Industrial Village, Northern Territory

McCANN, Brigadier Raymond Leslie, Director-General, Accommodation and Works, Army, Campbell Park Offices, Canberra, Australian Capital Territory 2600

MIDGLEY, Ms Katharine, Coordinator, Aircraft Noise Abatement Group, PO Box 1604, Darwin, Northern Territory 0801

PURICH, Ms Kezia, C/- Chamber of Mines and Petroleum, Raffles Plaza, Darwin, Northern Territory

QUINN, Lieutenant-Colonel Stephen Michael, Commanding Officer, Darwin Logistic Battalion, Larrakeyah Barracks, Department of Defence, Larrakeyah, Northern Territory 0820

SECRETARY, Ms Helen Patricia, President, Gwalwa Daraniki Association, PO Box 40694, Casuarina, Northern Territory 0811

SMITH, Mr David Wilson, Consultant, Gwalwa Daraniki Association, GPO Box 2898, Darwin, Northern Territory 0801

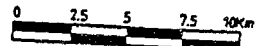
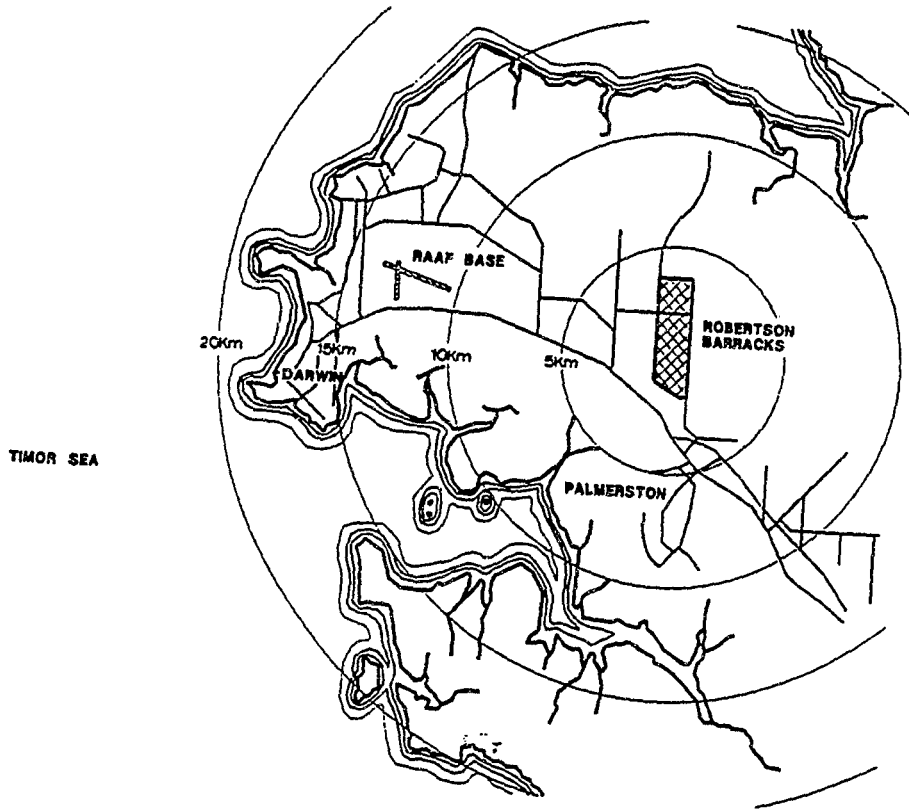
TAMBLING, Senator Grant Ernest John, Unit 3, 80 The Esplanade, Darwin, Northern Territory

APPENDIX B

PROJECT DRAWINGS

Location Plan	B-1
Zone Plan	B-2
Stage Masterplan	B-3
Masterplan with APIN 2 Site Area References	B-4
Transit Camp	B-5
Officers' Accommodation/Medical Centre	B-6

ROBERTSON BARRACKS LOCATION DIAGRAM



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APIN STAGE 2

LOCATION PLAN

PROJECT MANAGER: T. BELLEW
DECEMBER 1996

DRAWING NO.

PROVIDE.DOC/1394

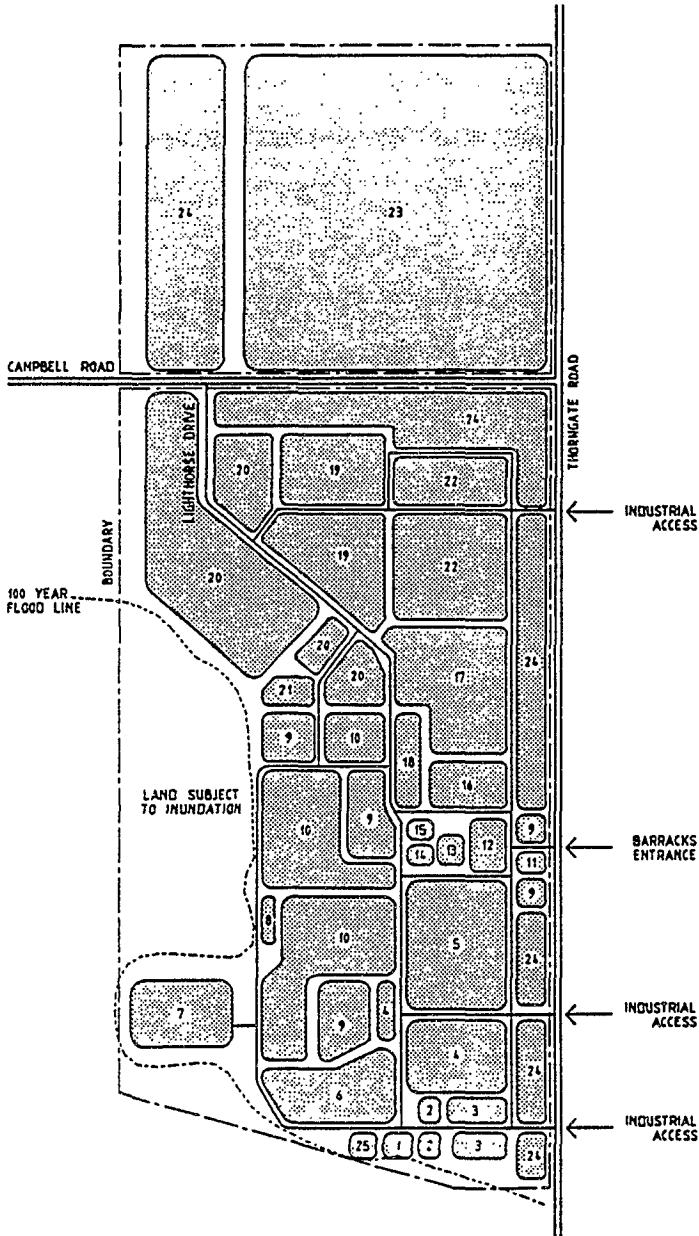
B-1

1

ROBERTSON BARRACKS ZONE PLAN

LEGEND

- 1 ANTENNA FARM
- 2 LASER TRAINING RANGE
- 3 FUEL POINT AND VEHICLE W.
- 4 2 CAV REGT
- 5 5/7 RAR (Meth)
- 6 1 ARMO REGT
- 7 1 CER
- 8 GROUND MAINTENANCE
- 9 COMMUNITY AND RECREATION FACILITIES
- 10 MESSES AND ACCOMMODATION
- 11 GUARD HOUSE
- 12 BRIGADE PARADE GROUND
- 13 HQ 1 BDE
- 14 ASSEMBLY/TRAINING FAC
- 15 HQ ASU-D
- 16 HQ 1 BDE-SIGS, G, TPT
- 17 103 HQM BTY
- 18 MED COY 1 BASS
- 19 HEALTH CENTRE
- 20 1 BASD
- 21 FUTURE DEVELOPMENT
- 22 TRANSIT CAMP
- 23 ASU-D
- 24 CLOSE TRAINING AREA
- 25 BUFFER ZONE



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APIN STAGE 2

ZONE PLAN

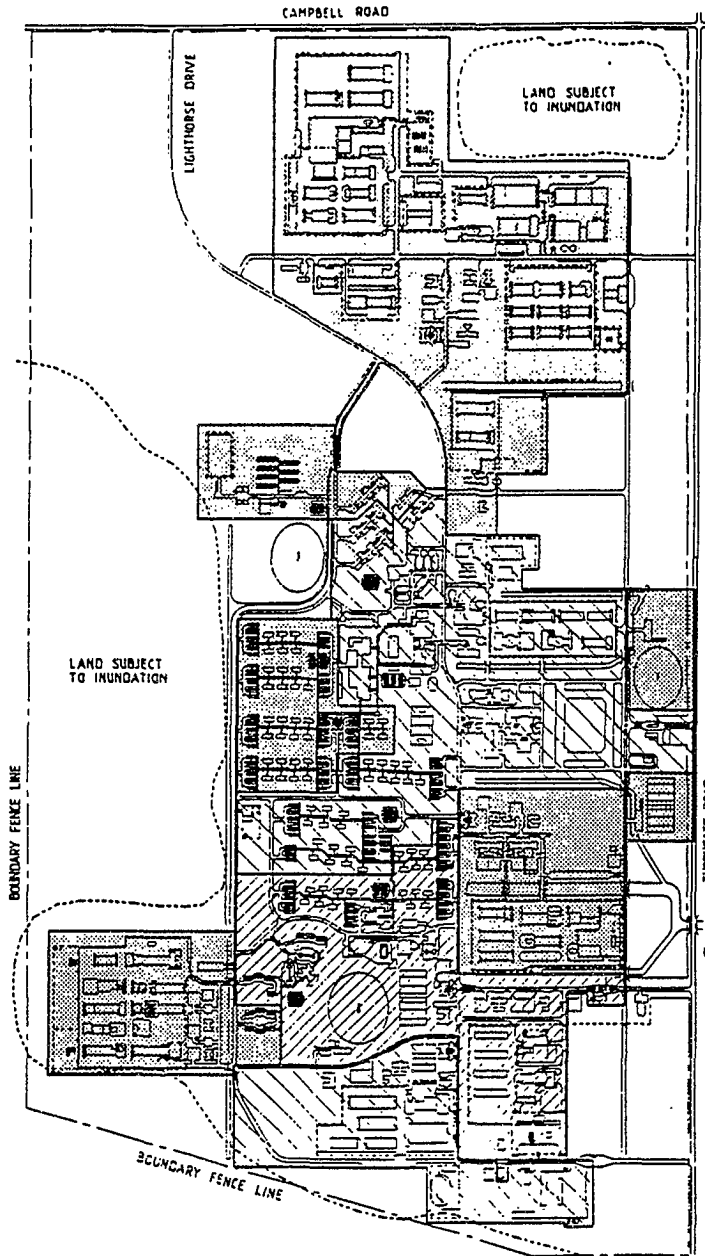
PROJECT MANAGER T PELLEW
DECEMBER 1994

DRAWING NO.
94/SP2735/SOPM2




2

PROVIDED TO THE

ROBERTSON BARRACKS MASTER PLAN



LEGEND

-  2 CAV
-  APIN 1
-  APIN 2



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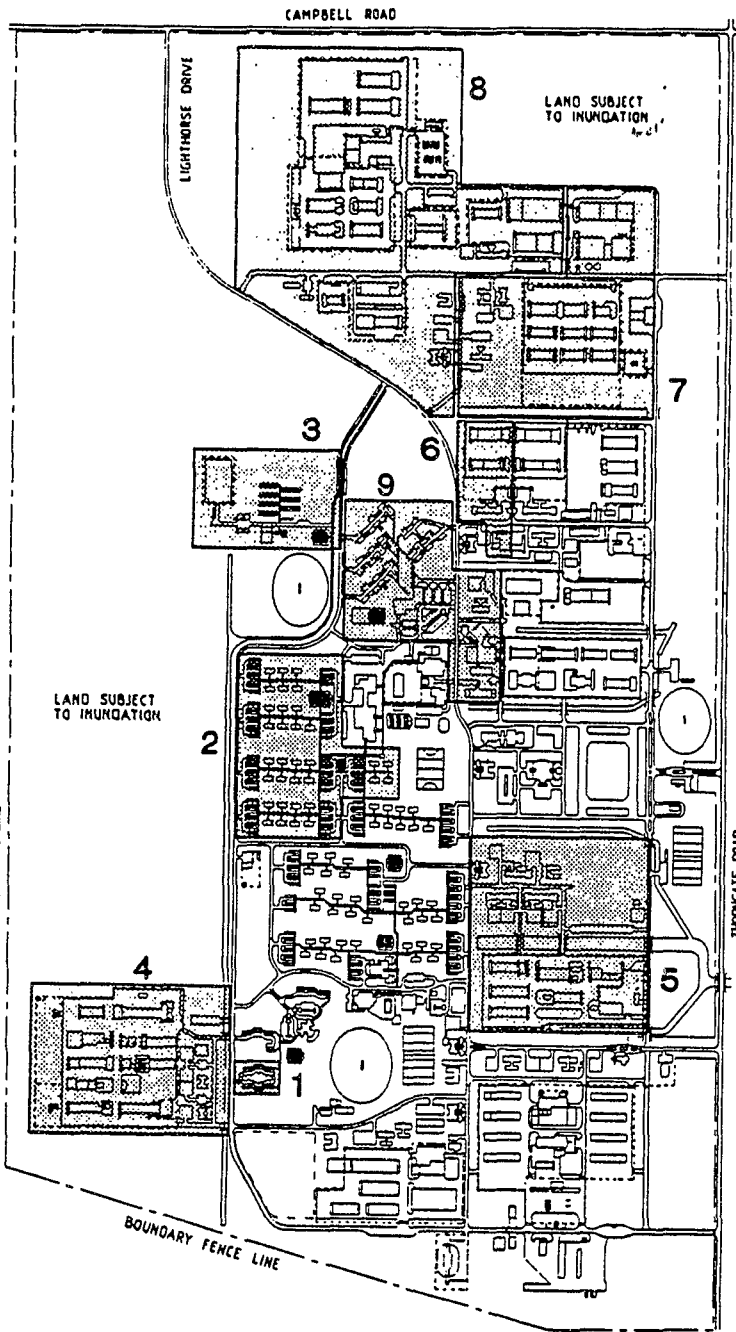
APIN STAGE 2

STAGE MASTERPLAN

PROJECT MANAGER T PELLEW
DECEMBER 1994

DRAWING NO
94/SP1735/90P003

3



LEGEND

- 1 SMCO
- 2 OR
- 3 TRANSIT CAMP
- 4 1 CER
- 5 5/7 RAR (Mech)
- 4 103 MOM BTY
- 7 ASU-D
- 8 1 BASB
- 9 OFFR ACCN/MED CEN

BOUNDARY FENCE LINE

LAND SUBJECT TO INUNDATION

BOUNDARY FENCE LINE



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APIN STAGE 2

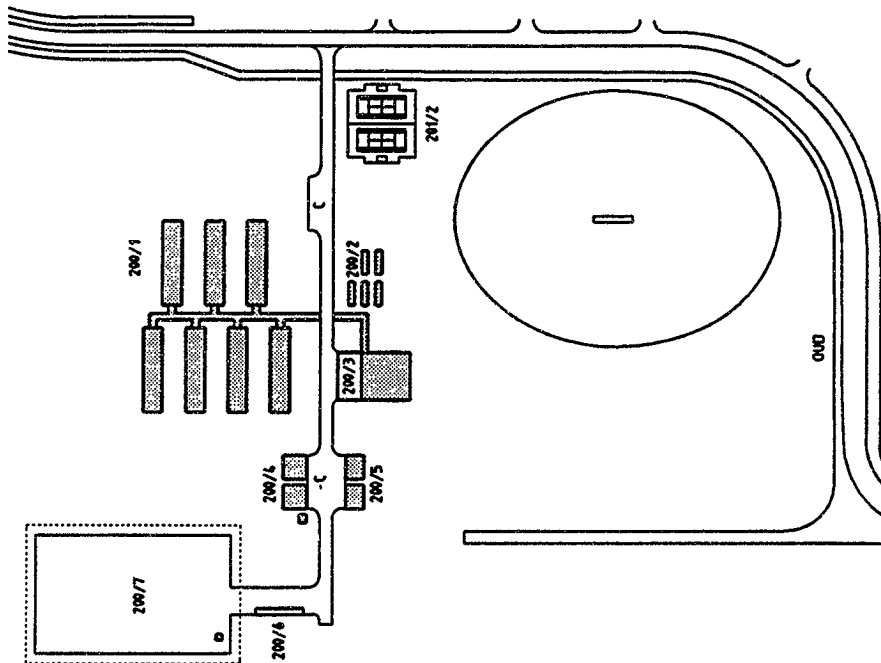
MASTERPLAN WITH APIN 2
SITE AREA REFERENCES

PROJECT MANAGER T PELLEY
DECEMBER 1994

DRAWING NO
94/SP7735/SOP001

LEGEND

BLD	DESCRIPTION	SHEET
200/1	ACCOMMODATION/ABLUTIONS	9a
200/2	LAUNDRY/CHANGEROOMS/ABLUTIONS	-
200/3	KITCHEN/DINING	-
200/4	STORES	-
200/5	OFFICES	-
200/6	VEHICLE INSPECTION	-
200/7	COMPOUND	-



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APIN STAGE 2
TRANSIT CAMP

SITE AREA 3

PROJECT MANAGER: T. PELLEV
DECEMBER 1996

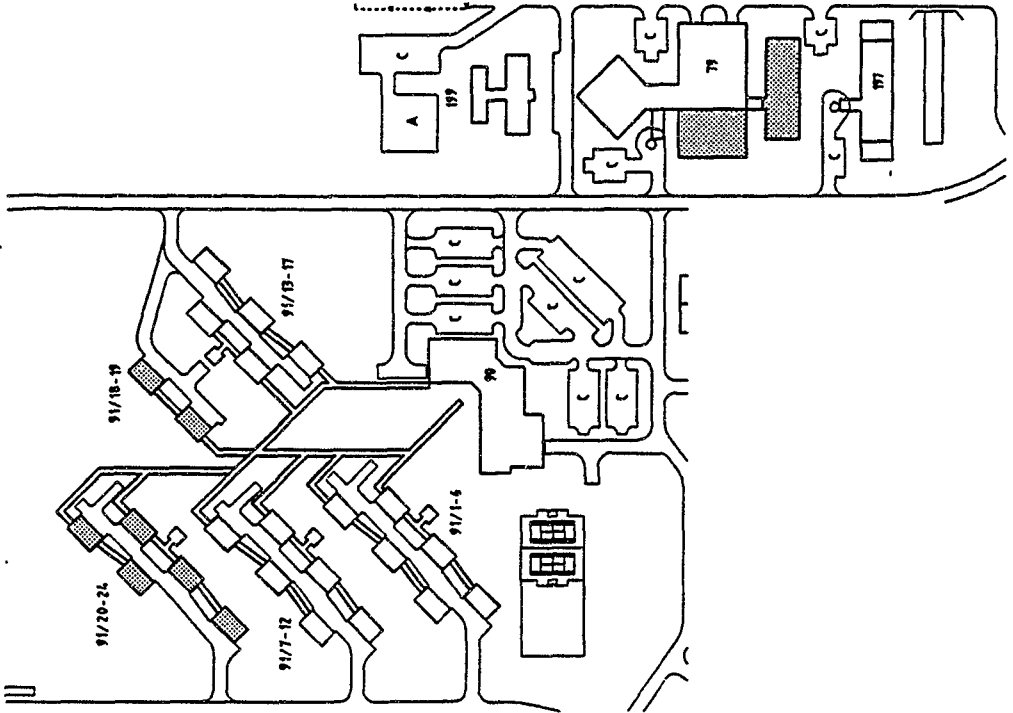
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LEGEND

BLD	DESCRIPTION
91/1-24	OFFICERS' ACCOMMODATION
C	CAR PARK
A	ASSEMBLY AREA
79	HEALTH CENTRE
197	DENTAL COMPANY
199	MEDICAL COMPANY HQ

SHEET



**AUSTRALIAN
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SERVICES**

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APIN STAGE 2

OFFICERS' ACCOMMODATION,
MEDICAL CENTRE

SITE AREA 9

PROJECT MANAGER: I. PELLEV
DECEMBER 1976

DRAWING NO
94/S2235/SKP013

9C

APPENDIX C

DESCRIPTION OF PRINCIPAL APIN STAGE 2 UNITS AND FACILITIES

1ST BRIGADE ADMINISTRATIVE SUPPORT BATTALION

Role:

1 BASB provides logistic support to 1st Brigade units. Although all units are self supporting to some degree for their own logistic support, 1 BASB provides the next (2nd) level of logistic support to the 1st Brigade and other designated units. Logistic support includes the provision of:

- . supply support
- . workshop repair support
- . transport support
- . medical support
- . dental support
- . military police support.

Strength:

Total strength 349: 37 Offr, 55 SNCO, and 257 OR.

Major Equipment:

4 armoured vehicles, 154 general service vehicles and 10 pieces of plant.

Facilities:

The major facilities to be provided for 1 BASB as part of APIN Stage 2 are:

Battalion Headquarters

- . Administration Company
- . Supply Company
- . Transport and Supplies Company
- . Maintenance Company
- . Military Police Platoon
- . Military Instruction Block

1ST COMBAT ENGINEER REGIMENT

Role:

The combat engineer regiment provides direct combat engineer support to the brigade. Combat engineer support includes demolitions; obstacle construction and breaching; road, bridge and airfield construction; and mine and booby trap clearance.

Strength:

Total strength 220: 18 Offr, 32 SNCO and 170 OR.

Major Equipment:

21 armoured vehicles, 74 general service vehicles and 23 pieces of engineering plant.

Facilities:

The major elements of the proposal include:

- . Regimental Headquarters
- . Field Squadron
- . Support Squadron
- . Regimental Workshops
- . Military Instruction Block

**5TH/7TH BATTALION, ROYAL AUSTRALIAN REGIMENT
(MECHANISED)**

Role:

5/7 RAR is a mechanised infantry battalion. It is a combat unit consisting of infantry soldiers mounted in armoured personnel carriers. Its role is, in conjunction with the other combat arms, to fight the land battle.

Strength:

Total strength 539: 34 Offr, 68 SNCO and 437 OR.

Major Equipment:

70 armoured vehicles and 58 general service vehicles.

Facilities:

The major facilities to be provided for 5/7 RAR (Mech) unit are:

Battalion Headquarters

3 x Mechanised Companies

Support Company

Technical Support Company

Administration Company

Armoured Vehicle Parking Bays

Vehicle Compounds

Military Instruction Block

Laser Mini Range

103RD MEDIUM BATTERY

Role:

The medium battery is a combat unit equipped with 155 mm howitzers. Its role is, in conjunction with the other combat arms, to fight the land battle by providing fire support for manoeuvre units.

Strength:

Total strength 135: 9 Offr, 18 SNCO and 108 OR.

Major Equipment:

3 armoured vehicles, 19 general service vehicles and 6 medium artillery pieces.

Facilities:

The major facilities to be provided for 103 Mdm Bty are:

- . Battery Headquarters
- . Battery Q Stores
- . Gun Bays
- . Vehicle Shelters
- . Military Instruction Block

LOGISTIC SUPPORT COMPANY, ARMY SUPPORT UNIT - DARWIN**Role:**

The role of the Logistic Support Company of Army Support Unit - Darwin is to provide base logistic support as directed by Headquarters Logistic Command - Army. The dependency of the unit consists of all units/formations located at Robertson Barracks and Army units located in or visiting the NORCOM Area of Responsibility.

Strength:

The final strength of Log Spt Coy of ASU-D is yet to be determined. For planning purposes a strength of 93 all ranks (including civilians) has been used.

Major Equipment:

Details of the major equipment to be held by Log Spt Coy of ASU-D are yet to be determined. Log Spt Coy will hold equipment required to conduct its allocated tasks as well as equipment which will be held to support 1 Bde and other units in Northern Australia.

Facilities:

Although the end requirement has not yet been finalised, for planning purposes the following facilities have been Master Planned for Log Spt Coy, ASU-D:

Company Headquarters

- ASU-D Military Instruction Block
- Freight Terminal
- Distribution Centre
- Camp Earmark Store
- Barracks Store
- Clothing Store
- Unit Vehicle Shelters
- Pool Vehicle Shelters
- Medical / Dental Store
- Combat Rations Store
- Armoury
- Small Arms Workshop
- Indoor Test Range
- Vehicle Servicing Facility
- Unit Archives
- Communications, Electro-Optics Pool Equipment Store
- Dangerous / Hazardous Goods Stores
- Company Q Store

ADDITIONAL OTHER RANKS LIVING - IN ACCOMMODATION

Allowances have been made in the MASTER PLAN to provide on-base living-in accommodation for single personnel. The basis of planning is that 70 % of Other Ranks are single or unaccompanied and will live in the barracks. This estimate, which is seen as the upper limit for living-in accommodation, is based on the detailed data obtained for the 2 Cav Regt project (1989). The estimate was again validated in Mar 94.

The project has five years to monitor demographic trends. Should the need for this accommodation decrease, fewer of the planned buildings will be constructed. Changes to the proposed program for the provision of living-in accommodation will be instigated prior to the relocation of each unit so that the project team can be confident that there will be no under or over provision of accommodation.

Facilities:

The facilities to be provided are:

- Up to 33 two storey accommodation units (16 bed spaces per unit)
- Carports
- Covered Walkways
- Siteworks

ADDITIONAL SNCO LIVING - IN ACCOMMODATION

Senior Non-Commissioned Officers' (SNCO) Mess living-in accommodation is being provided for unaccompanied SNCO. During the 2nd Cavalry Regiment project, living-in accommodation was provided in a single precinct for Officers and SNCO. This existing accommodation will be utilised exclusively by SNCO when the new Officers' Mess facilities, which are being constructed as part of APIN Stage 1, are completed. Current demographic trends indicate that to meet all the living-in requirements for SNCO in Robertson Barracks at the conclusion of the APIN Project it will be necessary to provide accommodation for an additional 36 SNCO. This accommodation is to be provided in APIN Stage 2.

However, as the demographic trends of military personnel may possibly change during the life of the APIN Project, Army will monitor the requirement for living-in accommodation to ensure that only sufficient facilities are constructed to accommodate those SNCO entitled to use the facilities. Changes to the program for the provision of living-in accommodation will be instigated prior to the relocation of each unit so that there will be no under or over provision of accommodation.

Facilities:

The elements of the proposal include:

- 6 high set accommodation units with parking under (6 SNCO bedrooms per unit)
- Covered walkways
- Siteworks

ADDITIONAL OFFICER LIVING - IN ACCOMMODATION

Officers' Mess living-in accommodation is being provided for junior and senior unaccompanied officers of all units in Robertson Barracks. Accommodation for 72 junior officers and 20 senior officers is being provided as part of APIN Stage 1.

This will be increased with further accommodation for 30 junior officers and 8 senior officers during APIN Stage 2. However, as the demographic trends of military personnel may possibly change during the life of the APIN Project, Army will monitor the requirement for living-in accommodation to ensure that only sufficient facilities are constructed to accommodate those officers entitled to use the facilities. Changes to the program for the provision of living-in accommodation will be instigated prior to the relocation of each unit so that there will be no under or over provision of accommodation.

Facilities:

The facilities to be constructed are planned to be identical to those constructed as part of APIN Stage 1. Elements of the proposal include:

- 5 high set accommodation units for junior officers with parking under (6 junior Officers per unit)
- 2 high set accommodation units for senior officers with parking under (4 senior Officers per unit)
- Covered walkways
- Siteworks

EXTENSIONS TO SNCO MESS

A combined Officers and SNCO Mess was provided as part of the 2nd Cavalry Regiment Project. With the increased population resulting from the APIN Stage 1 Project, this combined facility is to revert for use by SNCO only. (A new Officers Mess is being provided as part of APIN Stage 1.) With the further increase in population resulting from the relocation of APIN Stage 2 units the Mess facility will need to be extended.

Facilities:

The SNCO mess is to be extended by approximately 250 square metres.

RELIGIOUS CENTRE

In accordance with Commonwealth policy and Services' Scales and Standards of Accommodation (SSSA) a single multi-denominational chapel is to be provided.

Facilities:

The facilities to be provided include:

- Vestry
- Sacristy
- Vestibule
- Offices for Chaplains
- Congregational Area
- Toilets
- Car parking facilities (to be shared with other area facilities)

TRANSIT CAMP

The Transit Camp will be used to accommodate two visiting units (up to company/squadron strength) from either Australia or overseas. If more, or larger, units visit concurrently it will be necessary to supplement this facility with tentage.

RAAF Base Darwin has demountable facilities (for approximately 500 personnel) which are heavily used for RAAF and foreign air forces' exercise programs and are generally not available for use by Army units.

Savings of over \$16.00m will result as the facilities to be constructed will be below the scales used to provide permanent accommodation.

Facilities:

Facilities to be provided are:

- 200 accommodation rooms
- 7 x ablution blocks ie, one for each 60 personnel (approx)
- limited office and stores accommodation for up to two company/squadron headquarters

an enclosed compound for vehicles and stores
limited dining facilities

OUTDOOR TRAINING FACILITIES

Facilities to be provided are:

- . Extensions to Marksmanship Training Range
- . 25m ranges
- . Field Miniature Range
- . Test Fire Pit
- . Specialist Weapon and Demolition Ranges
- . Confidence Course
- . Roping and Rappelling Tower
- . Aircraft Mockups
- . Wet weather instructional sheds

OUTDOOR PHYSICAL FITNESS/RECREATION FACILITIES

In addition to the facilities provided by the 2nd Cavalry Regiment and APIN Stage 1 projects, this proposal provides the following physical fitness/recreation facilities in accordance with Services' Scales and Standards of Accommodation (SSSA):

Facilities:

The outdoor physical fitness/recreation facilities to be provided in APIN Stage 2 are:

- . two Australian rules/cricket size fields
- . one rugby size field
- . five tennis/multi-purpose courts

CIVIL ENGINEERING/ELECTRICAL/COMMUNICATIONS AND INFRASTRUCTURE

Robertson Barracks is a completely "green fields" site with no services infrastructure (ie, roads, stormwater, water, sewerage, electrical and telecommunications) except that provided to meet the 2nd Cavalry Regiment and APIN Stage 1 requirements. The proposal provides the services infrastructure both to the barracks and within the barracks, which were not

provided in the 2nd Cavalry Regiment or APIN Stage 1 projects, to meet the total Robertson Barracks requirements.

AMMUNITION STORAGE AND INSPECTION FACILITIES

The two explosive storehouses (ESH) constructed for 2 Cav Regt at the RAAF ordnance storage complex, Marrara Swamp, are able to cater for the total 2 Cav Regt and APIN Stage 1 requirements.

Facilities:

The following additional facilities are to be constructed at Marrara Swamp, RAAF Base Darwin to cater for the total Army explosive ordnance storage requirement (ie once APIN Stage 2 is complete):

- 2 x 23m Spantech buildings
- 1 x double ended 13m Spantech building
- an Inspection/Minor Repair Facility
- a Control Office
- Non-Explosive Store.

SICK QUARTER WARDS

The Medical Centre being provided by APIN Stage 1 is an out-patient facility, and provides medical and dental support to all Army units located in or visiting Robertson Barracks and the NORCOM Area of Responsibility. This facility will also provide medical support and surge capacity for Navy and RAAF units in the NORCOM Area of Responsibility. With the increasing dependency resulting from APIN Stage 2, the Medical Centre is to be extended to provide a sick quarters accommodation for those minor cases that require supervision in bed, either because barracks or home accommodation is inappropriate, or for post operative recovery and convalescence. In addition, because of the costs associated with using private medical facilities for minor surgical procedures, an operating theatre for minor routine procedures is to be provided.

Facilities:

The following extensions to the Robertson Barracks Medical Centre are to be provided:

**Wards with a capacity for 30 in-patients
Surgical Suite**

MUSEUM

Facilities:

The funds programmed for the museum are sufficient for an austere facility of approximately 1000 square metres. There is also a small allowance for external works for outdoor displays and other external facilities. No allowance has been made for car parking as it is envisaged that the museum will be located near the childcare facility where car parking will be available out of hours when the childcare facility will not be operating.

APPENDIX D

BROAD PRINCIPLES ON WHICH MASTER PLAN REPORTS WILL BE BASED

- . All development is to be located above the predicted 100 year average recurrence interval flood zone
- . Brigade command and garrison support functions are to be centrally located to permit ready access by all units on the site
- . Living accommodation areas are to be separated from work areas
- . Separate accommodation areas are to be provided for officers, senior non-commissioned officers and other ranks
- . Recreation and civic areas are to be adjacent to sports fields to permit outlook and close access
- . Work areas are to be located within view of sports fields for outlook and visual relief
- . Vehicular and foot traffic is not to cross within living accommodation areas
- . Messes are to be located within accommodation areas to minimise walking distances. Covered walkways will link these facilities
- . Industrial areas will be landscaped to enhance the working environment and provide visual relief from hard paved areas
- . Access to most facilities is to be provided by more than one road, to avoid conflict between large/heavy vehicle traffic and light vehicle traffic
- . Tracked and heavy vehicles will be restricted to selected roads and areas that are constructed from interlocking concrete blocks to avoid damage to normal road surfaces

- . Lighthorse Drive will be the major north-south carriageway linking the southern sector of the site with Campbell Road to the north (and thus suburban Darwin). The buffer zone road to the east and the western perimeter road will facilitate local traffic movement and ease traffic density on Lighthorse Drive
- . The main entrance to Robertson Barracks will be off Thorngate Road at the gate house opposite the Brigade Parade Ground and Brigade Headquarters. Three industrial entrances, also off Thorngate Road, will be provided. The existing entrance off Campbell Road into Lighthorse Drive will also be retained
- . Services, including electric power, communications, water, sewer and storm water will be confined wherever feasible, to defined service corridors.

BUILDING DESIGN

Buildings will draw on and reinforce the form of architectural style used for the facilities provided for 2nd Cavalry Regiment and APIN Stage 1. Distinctive yet simple building forms will be developed for each zone to reinforce the variations in function. Large roof overhangs and verandahs are to be encouraged to maximise shading. Sloping facias are deemed appropriate to give the effect of a fine edge treatment. Roof pitches used for 2nd Cavalry Regiment are to be retained where possible. Square or rectangular buildings are to be used wherever possible to allow simple roof forms and subsequent overhangs.

Structures will generally be lightweight, metal framed and metal clad. The cladding profile to the roof and walls of industrial buildings will be "Trimdeck" (or similar) as that profile suits the building scale. The profile for the remaining buildings will be "Spandek" (or similar) for both roof and walls. High buildings (eg industrial, physical fitness centres, etc) should have wall cladding with vertical ribs, whereas other buildings are to have horizontal ribs. Areas that are predominantly wet will be masonry with precoloured texture finishes where exposed externally. Cyclone shelters and essential generator housing will have masonry walls or other suitable materials appropriate to the safety and protection required. Specialised complex construction techniques, "one-off" mouldings and materials, non-essential decorative effects and over design are to be avoided.

Structural Design

Cost effectiveness, strength, durability and serviceability will be taken into account in designing structures to fulfil the functional, architectural and service requirements.

Consideration will also be given to the local availability of materials and to ease of construction.

All buildings will comply with the Building Code of Australia (BCA), requirements of the Department of Defence, including "Scales and Standards of Services' Accommodation" and the "Manual of Fire Protection Engineering" (FACMAN 2) and the relevant Northern Territory codes.

Corrosion protection will be provided for all steel work.

Materials and Finishes

Wherever possible common materials and finishes were used throughout the 2nd Cavalry Regiment project. The use of these materials is to be continued as the first preference in the further development of Robertson Barracks.

While changes to materials will occur in future developments, their impact on existing facilities will be assessed before their use is approved.

APPENDIX F

MECHANICAL ENGINEERING SERVICES

Air conditioning

The following areas will be air conditioned: office spaces, medical wards, stores requiring temperature and/or humidity control, workshops requiring temperature and/or humidity control, kitchens and dining rooms, recreation rooms and spaces, and living accommodation bedrooms (for sleeping comfort only) and common rooms. Plant generated noise will be attenuated as necessary.

Passive design measures (such as cross flow ventilation and wide overhangs) will minimise the requirement for air conditioning. The passive designs will be complemented by a Building Management System which will allow management staff to disable air conditioning systems, from a central location, during periods of good weather.

Water Services

Hot water systems with a required storage capacity of greater than 100 litres will be integrated solar/electric. High consumption facilities, such as mess kitchens, will be provided with roof mounted solar collectors (serving storage tanks located in the plant room) and with gas fired mains' pressure heaters sized for peak load demand and backup of solar systems. Systems with smaller storage requirements and boiling water units will be mains' pressure electric heated.

Heavy duty mains-connected refrigerated drinking fountains, having both water jets and glass fillers, will be provided to all work areas and recreational facilities.

Water for fire services will be separately reticulated from a dedicated valve at the main's entry to each building.

Water Conservation

Where possible and appropriate, measures will be adopted to minimise water use and wastage, particularly in the living accommodation, by use of water

control (valve) inserts in taps, low flow shower nozzles, etc.

Fire Suppression

All facilities will be protected by external fire hydrants, fire hose reels and fire extinguishers to BCA requirements and the “Manual of Fire Protection Engineering” (FACMAN 2). Major stores and particularly vulnerable or high value facilities will be provided with sprinkler systems to AS 2118. Kitchen deep-fat fryers and associated exhaust hoods will be protected by appropriate liquid chemical fire suppression systems.

Workshop and Vehicle Services

All workshops and vehicle facilities will be provided with power, light, water and reticulated compressed air appropriate to the end use. Local exhaust gas systems will be provided as required. Cranes and vehicle hoists will be provided to user requirements. Reticulated compressed air operated lubrication/fluid systems will serve major vehicle servicing facilities only.

Power Supply

The power supply to the APIN Project development is to be provided by an 11 kilovolt reticulation system inter-connected to the existing 11 kilovolt system in the 2nd Cavalry Regiment facilities. The resulting system is to be connected to a second point of supply from Campbell Road which will provide a secure open ring distribution system.

High / Medium Voltage

High and medium voltage cabling is to be underground, to minimise cyclone damage and disturbances from lightning activity, and will incorporate termite protection. High voltage cables should generally be installed in service corridors adjacent to roads, along with other services. Transformer protection will be by circuit breakers. Where switch gear and transformers are collocated, they are to be combined into a single enclosure.

Power Supply Switch Boards

Energy consumption metering will be incorporated into the main switchboard at each facility to allow client monitoring of energy consumption.

Where a facility has designated emergency supplies, additional mains will be brought into the building. Each switchboard is to incorporate spare capacity for future requirements.

Fire Alarms

All fire alarms will be terminated at the Guard House located at the main entrance to the Barracks. Fire alarm panels should be restricted to the types already in use in the 2nd Cavalry Regiment facilities to minimise maintenance and spares problems.

Lighting

Preference is given to energy efficient lighting to minimise running costs. This includes fluorescent and discharge lighting. Incandescent lighting should only be chosen where dimming is required, or where there is no suitable alternative energy efficient source. Low loss type ballasts should be specified. External security lighting is to be provided at most facilities. Sodium sources will be provided to minimise attraction of insects.

High pressure sodium street lighting, to match the 2nd Cavalry Regiment facilities, is to be provided to all streets. Street lights are to be located along service corridors adjacent to roads such that the luminaries are positioned approximately over the kerb line.

Emergency Supply

Emergency supply will be from emergency generator sets provided as part of APIN Stage 1. Emergency power will be provided automatically. The emergency generator is to provide standby power during normal power failures and after cyclone conditions. Locations requiring emergency power include designated cyclone shelters, operations centres and sewerage pumps.

Telecommunications

Telecommunications cabling networks will be installed underground in conduit equivalent to Telecom external works standards, and in accordance with the AUSTEL regulations. The existing site MDF and PABX are located in 2nd Cavalry Regiment Headquarters. . A new PABX and MDF will be provided in the Army Support Unit - Darwin, Headquarters building. At that time, the existing MDF and PABX will be utilised as satellite

facilities and to provide redundancy to the system.

Telecommunications cabling for the APIN Project will include a structured cabling system to allow for significant increases in computer systems support. The site cabling system will be based on a fibre optic backbone.

Internal building cabling will be suitable for voice and data communications.

Other Electrical Services

Where possible, other electrical, control and management services will be implemented using telephone cabling and appropriate interfaces. These other services include the Muster (Siren) Systems, Security Systems, Pump Controls and Building Management Systems.

An exception to the above philosophy is antenna cabling, as radio frequency signals cannot be transmitted using standard telephone cabling.

Earthing and Lightning Protection

An extensive earthing and lightning protection system was provided for the 2nd Cavalry Regiment Project and will be expanded through both APIN Stages. Additional lightning protection will be provided to sensitive equipment such as PABX and fire alarm panels.

The location of Robertson Barracks within the Shoal Bay buffer zone requires the incorporation of measures to screen potential radio frequency interference sources of the type described in AS 3516 Pt 1. Facilities likely to generate radio frequency interference will incorporate radio frequency shielding providing appropriate attenuation to plane waves. All cables into screened areas will be filtered.

The Radio Interference of all electrical equipment will be limited to AS 1044 and AS 2279.

Fire Protection

In developing the strategy for fire protection and the installation of alarms, cognisance was taken of the absence of either a civil or military staffed fire service.

Smoke detectors are to be provided to all living-in accommodation to the requirements of FACMAN 2. Fire alarms, to AS 1670, are to be provided to all nominated facilities. Fire alarms are to be extended to the Master Fire Indicator Panel in the main Guard House. A telemetry system has been installed at the 2nd Cavalry Regiment facilities to allow connection of remote fire alarm panels to the Master Fire Alarm Panel using telephone cabling. New fire alarm panels are to use this existing system.

Manual call points are to be provided in the ground floor porch of each living accommodation unit, and will be connected to the system described above.

Sprinkler systems are to be provided in nominated high value facilities. The fire alarm system is to be interlocked with other water consuming systems (eg irrigation) to ensure adequate sprinkler water flow rate during fire situations. The irrigation sprinkler system may be required to be shut off in such a situation.

Civil Engineering Services and Roadworks

Water Supply

Water is supplied to the Robertson Barracks site by the Northern Territory Power and Water Authority (PAWA). An additional metered supply main is being constructed as part of APIN Stage 1 to provide additional reliability of supply and better control of supply pressure. The PAWA mains' water service is currently being upgraded to ensure the reliability of normal supply to the Barracks. Defence has contributed \$7.800m under APIN Stage 1 to the upgrading of headworks and the construction of the new mains. All new pipelines within Robertson Barracks are to be sized to allow for future extension which will be needed if additional Army units are located in the northern sector of the site.

The PAWA supply is purified and no further treatment on-site is required.

The existing irrigation of large open areas, such as playing fields, is by means of in-ground fixed automatic irrigation systems drawing from an underground concrete tank. In the event of a fire alarm being initiated from an automatic fire suppression or detection system, the landscape irrigation system may be rendered inoperable.

Conservation practices are to be adopted to minimise water consumption, including use of water efficient fittings within buildings, reduced use of spray systems, extensive use of dripper landscape irrigation and dry land grassing.

Water management is a critical element of the Landscape Master Plan. Investigations into the potential for use of ground water, "grey" water and other sources of non-potable water for irrigation of landscaping are being conducted.

Fire fighting systems will include in-ground fire hydrants, fire sprinkler systems and fire hose reels.

Sewerage

The sewerage system within the 2nd Cavalry Regiment facilities is a conventional gravity system incorporating two pumping stations which can be upgraded to cater for a population of 3000 by impeller replacement. Sewage from the site Outfall Pump Station is pumped to the PAWA gravity system at Palmerston, approximately 2.5 km from the site, through a 225 mm diameter pressure pipeline. The sewerage system for the APIN Project will connect to the existing system in the 2nd Cavalry Regiment facilities.

Mains are to be sized to suit standard stock pipe sizes held by the PAWA.

Trade waste discharges to the sewerage system will meet PAWA requirements and, where required, pre-treatment of selected wastes is to be provided at, or close to, the source of generation of the waste. Pre-treatment includes acid neutralisers, oil separators and grease traps.

Stormwater Drainage

All drainage systems from the barracks area ultimately drain into Milners Creek, which discharges into the sea via a large tidal marsh zone north-east of Robertson Barracks. Northern Territory Government requirements for stormwater discharge from Robertson Barracks were established during the development of facilities for the 2nd Cavalry Regiment. They include a condition that stormwater would not endanger an identified fish breeding area in the lower reaches of Milners Creek. To achieve this, Defence will ensure that sediment transported in floods is not sufficiently increased as a result of the development, and that other water quality parameters remain within appropriate limits.

An existing culvert under Thorngate Road has been upgraded. It is designed to satisfactorily discharge the predicted 50 year average recurrence interval storm flow. Underground storm water drainage systems will be designed for storms of average recurrence interval not greater than 5 years, unless critical sites are identified which require a higher standard. Open drainage systems will generally be designed to carry 20 year average recurrence interval storm flow without overflow. Where open, contoured spoon drains adjoin living accommodation, they will be grassed and designed to be available for informal recreational uses if so required.

Potential contamination sources of storm water from operations at the barracks will be controlled by interception and treatment of contaminants where appropriate.

Solid Waste Disposal

All solid waste will be taken off-site to suitable local government facilities. Toxic or hazardous materials are to be collected separately and dealt with in accordance with relevant legislative requirements. Collection bins are to be sited at facilities where wastes are produced.

Road Works

Thorngate Road requires reconstruction and sealing from just north of the existing main entrance, opposite the Brigade Headquarters, to the new industrial access which will service 1 BASB and ASU-D. Defence contributed, under APIN Stage 1, to funding the realignment, upgrading and sealing of Thorngate Road from the Stuart Highway to the existing entrance. Intersection improvements at the Stuart Highway were also completed at that time.

Tracked vehicles are to be restricted to the southern and eastern perimeter roads and to paved areas within the Barracks area. Pavements for tracked vehicle usage will be of interlocking concrete block construction. Colours of pavers are to be selected to delineate areas or functions, to assist with traffic management and to ameliorate the effects of the tropical heat.

Pavements, for roads to be used by tracked vehicles, will have a kerb to kerb width of 9.0 m. To accommodate road trains, intersections will have a 12.0m design radius. Pavement design loading is based on legal maxima for Northern Territory roads.

Ducts will be provided under pavements for installation of future services where deemed necessary.

Landscaping

The use of palms and other tropical plants is to be included for dramatic visual effect and provide an expected perception of the "tropics". The introduced tropical plants should be used for bush tropical effect in some detail gardening and should generally be restricted to residential and administrative areas. Introduced trees are to be selected for shade and formal avenue planting. Screening shrubs will be used only where a high requirement for screening exists. Garden beds and shrubbery will be mulched with brick chips or laterite as appropriate.

The developed sections of the site consist of four principal use areas: Administration, Accommodation and Messes, Industrial (work) and Recreational (civic). Landscaping to these functional areas should conform to the following guidelines:

Administration. The surroundings to these buildings should have good quality garden beds and shrubbery with some degree of formality.

Accommodation and Messes. The entrances and associated outdoor living areas should have good quality garden beds and shrubbery using palms and colourful species, designed for low maintenance. Elsewhere, treatment should be predominantly dryland grass and shade trees, with drifts of trees between lines of buildings to provide separations and a sense of place.

Industrial. Where large areas of paving occur, trees that develop to a substantial size should be used. Such trees should provide sufficient clearance for the movement of vehicles. Medium sized trees for shade together with ground covers and mulches are appropriate at entrances to administrative sections of industrial buildings to provide a focal point. Screening shrubs are generally not permitted, particularly near perimeter fences, nor must trees overhang security fences. Grassed areas which adjoin work areas will be sufficient for personnel to create their own recreation areas if desired (eg volley ball).

Recreational. These areas include sports fields, swimming pools, physical fitness buildings and canteens. Grassed areas will be irrigated

and mounding is desirable if space permits. An abundance of shade trees will be used around sporting facilities.

Grassing and Irrigation. Grassing to sporting fields, swimming pool surrounds, administrative entrance areas and roadsides will be fully irrigated high grade turf. Edges of major roads will be irrigated dryland grass and other cleared areas will be dryland grass with the provision of taps to allow watering by hose and sprinkler, for establishment and thereafter as required. The types of grasses used at the 2nd Cavalry Regiment facilities are to be used throughout the Robertson Barracks site.

Energy Conservation

At each facility, loads are to be divided into essential and non-essential categories. Latching (similar to circuit breakers) contactors and local reset buttons, to shed and reset non-essential loads, are to be provided. Non essential loads are to be shed automatically on a time schedule, set on time clocks. The load shedding will occur at times when it is reasonably expected that the facilities will be vacant.

APPENDIX G

SOCIOLOGICAL CONCLUSIONS REACHED IN THE NOTICE OF INTENTION FOR APIN 1 AND 2

Economic Impacts

The conclusion reached in the NOI for APIN Stages 1 and 2 was that "... APIN will benefit the Northern Territory economy by increasing economic activity and, in turn, generating additional direct and indirect Territory based employment."

Sociological Impacts

The significant conclusion reached in the NOI for APIN 1 and 2 was that the injection of approximately 2 200 service personnel and approximately 2 600 dependants is not going to have a significant adverse impact on the social structure of the resident population of Darwin.

Education

Based on the number of school-aged children and the anticipated residential location of Army housing, the relocation of the APIN units is not expected to place any undue pressure on government schools. There is generally a low level of spare capacity in non-government schools. The effect of this situation on the families of Army personnel will be dependent on the number of people who choose to send their children to non-government schools.

Based on discussions with representatives of the Department of Education, it is considered that the APIN project, on its own, would not create a sufficiently high demand to justify the establishment of new schools. This is based on the predicted house delivery strategy that will involve the distribution of Army housing throughout Darwin and Palmerston.

Infrastructure

The relatively gradual relocation of Army personnel and their families is expected to minimise the pressures placed on specific community facilities.

In addition, the extended nature of the APIN project will allow the servicing authorities sufficient time to respond to progressive demands generated by the project.

Housing

Based on the predicted long-term housing delivery program, over 45% of Army families may live in Palmerston. The remaining Army families are expected to be housed elsewhere in the Darwin area.

In the event that there is no substantial residential land release in Darwin over the next five years, the proportion of Army families to be housed in Palmerston could increase to over 60%. In order to encourage the distribution of future Army housing throughout both Darwin and Palmerston the release of new residential areas within the Darwin area is supported. This would have the effect of reducing dependence on the Palmerston area for the provision of the majority of Army housing. The even distribution of Army housing throughout both Palmerston and Darwin would also reduce the impact on community facilities.

The continuation of a diversified approach to housing provision should help to ensure that the APIN project continues to have a stimulating effect on the local housing market.