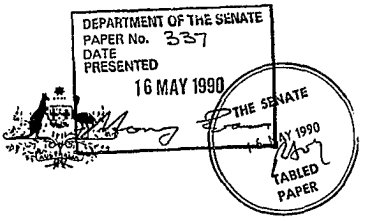

THE PARLIAMENT OF THE COMMONWEALTH OF AUSTRALIA

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS

REPORT

relating to the

STAGE 1 REDEVELOPMENT, PUCKAPUNYAL, VIC.

(Third Report of 1990)

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(Twenty-ninth Committee)

Mr Colin Hollis MP (Chairman)
Mr Percival Clarence Millar MP (Vice-Chairman)

Senate	House of Representatives
Senator Bryant Robert Burns	Mr George Gear MP
Senator John Robert Devereux	Mr Robert George Halverson OBE MP
Senator Dr Glenister Sheil	Mr John Graham Mountford MP
	Mr William Leonard Taylor MP *

* Appointed on 29.9.88 following resignation of Mr Maxwell Arthur Burr MP

Inquiry Staff: Mr Peter Roberts (Secretary)
Mrs Denise Denahy (Assistant Secretary)
Mrs Helen Fyfe (Secretarial Support)

EXTRACT FROM THE VOTES AND PROCEEDINGS OF
THE HOUSE OF REPRESENTATIVES

NO. 157 DATED MONDAY, 21 DECEMBER 1989

14 PUBLIC WORKS COMMITTEE - REFERENCE OF WORK - PUCKAPUNYAL REDEVELOPMENT, STAGE 1, VICTORIA: Mr West (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: Puckapunyal Redevelopment, Stage 1, Victoria.

Mr West presented plans in connection with the proposed work.

Debate ensued.

Question - put and passed.

MEMBERS OF THE PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS

(Thirtieth Committee)

Mr Colin Hollis MP (Chairman)
Mr William Leonard Taylor MP (Vice-Chairman)

Senate	House of Representatives
Senator Bryant Robert Burns	Mr Ewen Colin Cameron MP
Senator John Robert Devereux	Mr Lloyd Reginald O'Neil MP
Senator Dr Glenister Sheil	Mr Russell Neville Gorman MP
	Mr Bruce Craig Scott MP

Peter Roberts (Secretary)

EXTRACT FROM THE VOTES AND PROCEEDINGS OF
THE HOUSE OF REPRESENTATIVES

NO.4 DATED MONDAY, 14 MAY 1990

13 **PUBLIC WORKS COMMITTEE - REFERENCE OF WORK - STAGE 1 REDEVELOPMENT, PUCKAPUNYAL, VIC.:** Mr Beddall (Minister representing the 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: Stage 1 Redevelopment, Puckapunyal, Vic.

Mr Beddall presented plans in connection with the proposed work.

Debate ensued.

Question - put and passed.

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS

STAGE 1 REDEVELOPMENT, PUCKAPUNYAL, VIC.

By resolution on 21 December 1989 the House of Representatives referred to the Parliamentary Standing Committee on Public Works for consideration and report the proposal for the Stage 1, Redevelopment, Puckapunyal, Victoria. However, with the dissolution of the House of Representatives on the 19 February 1990, the reference lapsed and the previous Committee was unable to present its report, although it had completed its investigation.

Following the re-appointment of the Parliamentary Standing Committee on Public Works by the 36th Parliament, the project was again referred to it by the House of Representatives on 14 May 1990. The present Committee empowered by Section 24 of the *Public Works Committee Act 1969* agreed to consider the evidence place before the previous Committee. The report which follows is based on the investigation conducted by the previous Committee and the evidence considered by it. The report has been endorsed by the present Committee.

THE REFERENCE

1. This proposal is the first stage of a progressive redevelopment of the Puckapunyal area. The Department of Defence (Defence) proposes in Stage 1 of the project to replace sub-standard living-in accommodation, upgrade engineering services and replace or refurbish working accommodation for the Puckapunyal Logistics Battalion. A separate Stage 2 proposal will address the main works required to complete the redevelopment.

2. It is intended to phase Stage 1, with the most urgent items being constructed in the period 1991 to 1992. Work on the remainder of Stage 1 is planned to commence after the present Five Year Defence Program (FYDP).

3. The proposal is in conformity with Government policy as stated in the Defence Policy Information Paper - *Defence of Australia* (1987) - by substantially improving existing living-in accommodation and by rationalising and modernising working facilities.

4. The estimated cost of the proposal when referred to the Committee was $31.5m at July 1989 prices. The out-turn cost including provision for escalation and construction contingency is $44m.

THE COMMITTEE'S INVESTIGATION

5. The Committee received written submissions from Defence and Australian Construction Services (ACS) and took evidence from these organisations at a public hearing at Puckapunyal on 6 February 1990. Prior to the public hearing the Committee inspected the sites for the proposed works and existing facilities at the Puckapunyal military complex.

6. A list of witnesses who appeared at the public hearing is at Appendix A. The Committee's proceedings will be printed as Minutes of Evidence.

BACKGROUND

7. Puckapunyal is located approximately 100 kilometres north of Melbourne and 11 kilometres west of Seymour (see Appendix C). Puckapunyal military area was originally established as an Army training centre for new recruits prior to and during the Second

World War, and has become the main training centre for the Royal Australian Armoured Corps since 1942. Puckapunyal is currently home to three major operational units (two of which are part of the Operational Deployment Force), a newly formed logistics battalion, three major training establishments and various minor units employing in total approximately 2 000 service personnel.

8. The primary role of the Puckapunyal area is to provide the Army's only established armoured fighting vehicle (AFV) range. In 1983 after a public hearing, the Committee endorsed the construction of facilities for the Armoured Centre at Puckapunyal. These facilities have now been provided. Puckapunyal will remain the major training area in south-east Australia, in particular for armoured and mechanised training.

9. The secondary role of the Puckapunyal area is to provide a collective training area for both regular and reserve elements of the Army in south-east Australia. The Puckapunyal Logistics Battalion (PLB) provides logistic support for all units either permanently based or undergoing training at Puckapunyal. The Puckapunyal area provides administrative support to local and visiting units. It is the major area available in the Third Military District (3MD) for expansion mobilisation in the event of a contingency.

Existing Land Use

10. There are three main zones within the Puckapunyal area - the range complex, the military cantonment and Puckapunyal village (containing married quarters). The range complex covers approximately 42 500 hectares and consists of forested and open space training areas and a number of small-arms and large calibre weapons ranges. The range complex is used for training and is capable of brigade size exercises and live deployment of all major weapons used by the Army. Puckapunyal is the only training area in 3MD permitted to conduct field firing manoeuvres without

external restrictions, with the exception of bushfire bans. The military cantonment, or soldier accommodation, is located in the south-east corner of the range complex and includes accommodation for Army Reserve soldiers participating in training camps or courses at Puckapunyal. Puckapunyal village includes married quarters for service personnel and dependents which, at present, total approximately 2 200. Defence advised the Committee that it does not expect Seymour to expand to such an extent that it would encroach on Puckapunyal.

THE NEED

Accommodation

11. Living-in accommodation for the soldiers of the minor units at Puckapunyal is below Service Scales and Standards of Accommodation (SSSA). The accommodation was constructed in the 1960s as temporary accommodation for the then National Service Training Battalion. In addition to replacing below standard living-in accommodation, there is a need to construct additional bed spaces at Tobruk Barracks to compensate for the loss of bed space capacity consequent upon the upgrading of barrack accommodation as part of the Army's national living-in upgrade project. (Committee's Third report of 1988 refers)

12. Some units occupy redeveloped facilities but others are housed under ad hoc arrangements in buildings ranging from timber framed, corrugated iron, pre-Second World War structures to transportable buildings. Many of these buildings are in poor condition and require a regular commitment of funds to maintain.

Logistics Facilities

13. Current equipment, warehousing requirements, and repair systems have evolved to keep pace with advances in technology. Changes have also been made to the code of practice for

occupational health and safety for personnel in Commonwealth Government employment. Some facilities at Puckapunyal are either deficient in meeting these requirements or limit the manner in which these can be incorporated. In summary Defence believes that the state of current logistics facilities has resulted in a detrimental effect on the management of stores, repair and administrative functions.

14. Logistic support functions were rationalised recently by amalgamating and collocating base logistic elements (e.g. transport, supply and repair) at Puckapunyal. These elements were previously dispersed between Mob Siding (in Seymour) and Puckapunyal. This dispersal was inefficient and expensive in terms of operating costs. The Mob Siding facilities are in a state of disrepair and are now largely unused. The relocation of logistics elements was effected in a temporary manner mainly into existing facilities at Puckapunyal. This proposal involves a refurbishment of the existing facilities and replacement of the Mob Siding facilities by providing permanent, purpose-designed facilities for the newly formed Puckapunyal Logistics Battalion.

15. Defence advised that savings of approximately $1m per annum will result from the rationalisation of Mob Siding into the Puckapunyal complex, while manpower savings will total approximately 12 positions.

Engineering Services

16. The engineering services (water, sewerage and drainage) at Puckapunyal are unable to cope with their present load and require urgent upgrading. These services demand a significant maintenance expenditure to ensure their continued functioning. Refurbishment is required not only to keep the system operational but also to prevent an unmanageable replacement program in the future due to block obsolescence of the various systems. Work is required on the water and sewerage systems to meet health and environmental standards.

17. The water extraction, treatment and distribution system is owned by Defence. The system was originally built in 1939 and is inadequate. The peak demand cannot be satisfied without mixing the treated water with raw water and applying restrictions on garden watering at critical times. The oldest sections of the distribution system (pre 1950 asbestos cement pipes) are prone to frequent failures and require attention.

18. The sewerage system is also owned by Defence. Much of the system was constructed prior to 1950 and requires considerable operational maintenance. Excessive stormwater infiltration occurs causing overflows at low points. The treatment plant effluent generally satisfies the Victorian Environment Protection Authority (EPA) requirements. Sludge collection and digestion is unsatisfactory.

19. Puckapunyal is situated on the fringe of an area that is subject to inundation. ACS advised that periodic flooding occurs at certain low level areas. This affects a small section of the married quarters housing area.

Committee's Conclusions

20. The Committee agrees that a need exists to provide permanent living-in accommodation at Puckapunyal to Services' Scales and Standards of Accommodation.

21. The Committee also recognises the advantage of rationalising and integrating logistic facilities at the Puckapunyal Logistics Battalion.

22. The upgrading of engineering services is needed to satisfy present demands and meet health and environmental standards.

THE PROPOSAL

Objectives

23. The objectives of the proposal are to:

- provide permanent living-in accommodation to SSSA for living-in personnel and longer term students
- provide facilities to permit rationalisation and integration of logistic functions at the Puckapunyal Logistic Battalion
- upgrade the engineering services to satisfy present demands and to meet relevant health and environmental standards
- provide a planning and infrastructure framework on which to complete, as a second stage, the redevelopment of the Puckapunyal area.

Planning Framework

24. Previous development at Puckapunyal was influenced by the Army's need to maximise the usage of temporary buildings erected during the Second World War and during National Service in the 1950s and 1960s. The Stage 1 proposal will provide a planning and infrastructure framework in which to complete, as a second stage, the redevelopment of the Puckapunyal area. This structured approach will provide a better planning framework than the earlier incremental approach to redevelopment.

Location

25. The Defence Policy Information Paper released in 1987 recognised the requirement for an extensive infrastructure of bases containing training, logistic and other facilities to support the Australian Defence Force in its operations. While present policies may result in a gradual shift northward of operational units, the concentration of population and industry in the south and south-east of Australia tends to dictate the location of support bases. The Review of Australia's Defence Facilities by R.J. Cooksey (1987) recognised Puckapunyal as a significant Defence asset and stated that "... with one exception, is not considered necessary to relocate any of the units based at Puckapunyal". The one exception is the 21st Construction Squadron (21 Const Sqn). Defence advised that a decision should be made this year on whether 21 Const Sqn will remain at Puckapunyal or be relocated to Townsville or Darwin.

Options Considered

26. Three broad planning options were considered. These were:

- maintaining the status quo
- incremental development
- total redevelopment

Options 1 - Maintaining the Status Quo

27. The facilities planned for replacement are sub-standard, temporary or inadequate structures which are well past their planned lives. There are no surplus permanent working facilities available at Puckapunyal and the scale capacity of existing permanent living-in accommodation is inadequate to meet the

present requirements. No rationalisation of property or functions will be possible and manpower savings will not accrue if this option is adopted. Maintaining the status quo is therefore not considered a viable option.

Option 2 - Incremental Development

28. Because of resource availability, the option of incremental development was considered. This option would involve progressively replacing facilities in their present locations by undertaking a large number of separate medium works projects over many years. Programming of individual projects would be influenced by resource allocations and priorities elsewhere. The incremental approach fails to address the broader planning issues and may lead to ad hoc solutions because of short term pressures. Option 2 was discarded for these reasons.

Option 3 - Total Redevelopment

29. Redevelopment of the total area is based on the need to consolidate and upgrade all of the remaining sub-standard, temporary or inadequate logistic, working and other facilities. It involves rebuilding of facilities for the PLB, District Support Group (DSG), other minor units and various area facilities. It also makes provision in the zone plan for the rebuild of 21 Const Sqn should the squadron remain at Puckapunyal. This option also upgrades and rationalises the engineering infrastructure services in the Puckapunyal area.

Preferred Option

30. The total redevelopment option is the preferred option. It overcomes existing planning deficiencies associated with incremental development and permits utilisation of existing facilities and infrastructure as far as possible while promoting visual continuity in buildings and landscapes. These objectives

can generally be achieved without detriment to the prime objective of providing facilities to meet functional needs.

31. Resource availability militates against the total redevelopment option. It is necessary therefore to identify priorities and develop discrete work packages to meet programming requirements. Living-in and the associated messing accommodation, urgent elements of the engineering services work and PLB working accommodation were identified as priority requirements for inclusion into Stage 1 of a phased redevelopment. The remaining work can be deferred and will form the basis of a separate Stage 2 proposal which will be the subject of a separate submission to the Committee.

Committee's Conclusion

32. The Committee is satisfied that the staged total redevelopment at Puckapunyal is the best option available.

MASTER PLANNING

33. Master planning is being undertaken concurrently with this proposal to achieve better functional co-ordination, more efficient land use planning and building design. The approved zone plan is intended to form the basis of the area master plan. Specific issues and considerations which guided the development of the plan are as follow:

- the existing layout of the Puckapunyal area is basically sound

- the proposals contained in this reference will initiate the relocation of all operational areas to the western sector of the cantonment. This will eventually achieve:

- separation of residential and operational traffic

- the location of most operational areas off Morobe and Malaya Roads so that traffic will be reduced and intercommunications improved

- reinforcing and enhancing the existing separation of operational and residential areas

. reservation of the central area for landscape and recreational developments

. the establishment of a logistics complex for the area incorporating the primary storage of goods, training equipment, vehicle storage, freight terminal and workshop facilities

. the sharing between the existing units of facilities provided by the logistics complex

. the rank and file living-in accommodation is to be located within walking distance of the existing rank and file canteen and mess buildings.

SITE PLANNING

34. This proposal affects three sites:

- the extension of the rank and file living-in accommodation area

- the new site for the senior non-commissioned officers' (SNCO) living-in and mess facilities

- the development of the logistics complex. This site will be located between the existing workshop and storage facilities and will incorporate those facilities with some modifications.

35. Each site requires special attention to meet individual requirements, but the common features include the convenient utilisation of facilities, the maximisation of existing infrastructure and the promotion of a visual continuity in buildings and landscapes.

SCOPE OF WORKS

36. As outlined above the redevelopment of Puckapunyal is a long term project and therefore the proposal has been divided into two stages. Stage 1 will provide the more urgently required facilities and engineering services and Stage 2 will complete the redevelopment. The scope of works proposed for Stage 1 is summarised below.

37. Stage 1 will be undertaken in two phases.

Phase A:

. rank and file living-in accommodation (120 beds)

. rank and file mess/kitchen upgrading

. rank and file canteen upgrading

. infrastructure upgrading

Phase B:

The logistics complex will include the following:-

- upgraded heavy vehicle workshop
- ancillary trade workshop
- amenities
- kit store
- area service station and inspection facility
- vehicle parks
- transport operations building
- gate house/duty room
- Q stores
- Logistics Battalion headquarters
- SNCO living-in accommodation (24 beds)
- SNCO mess/kitchen
- infrastructure upgrade

Phase A

Rank and File Living-in Accommodation

38. The site selected for the rank and file living-in accommodation is the hillside immediately to the east of the existing rank and file canteen. The land slopes down from the north and west to the south and east. Accommodation blocks have been sited around a relatively level central path leading to the canteen and mess to the west, and will have a predominantly

north-south orientation. This will be energy efficient and will provide a very attractive view to the south and east. Each four person unit incorporates a common room of approximately $19m^2$. Heating will be the fixed electric oil filled type. The Committee was advised that electric heaters will be provided in accommodation blocks and gas heaters in workshop areas. Box facilities will be incorporated in the laundries. Bathrooms will be incorporated at scale on the ground half-level as will cleaners' facilities. Car parking spaces to scale will be distributed across the north of the development in four groups of 30.

Messing

39. The existing mess was constructed in the late 1960s and is large enough to accommodate the extra numbers arising from this redevelopment. The kitchen will require a comprehensive upgrading in order to replace old equipment, refitting of all ancillary areas and to provide new floor finishes, ceiling and new ventilation system. ACS advised the Committee that the messes will have evaporative cooling systems.

Rank and File Canteen

40. The existing rank and file canteen requires extension and adaptation to provide adequate facilities for the mix of soldiers and students who will use the area. The work will involve the refitting of the school staff area and construction of new recreation rooms and toilets on a site adjoining the dry canteen.

Infrastructure Upgrade

41. Work will commence with the highest priority components of the water treatment plant, water reticulation system, sewer reticulation system, the Popples Lane treatment plant and the effluent recirculation system. The Tower Hill storage tank will be roofed over and the Scrub Hill treatment plant will be upgraded.

Phase B

The Logistics Complex and SNCO Facilities

42. The Logistics Battalion is an amalgamation of the Puckapunyal Transport Unit (PTU), Puckapunyal Workshop Company (PWC) and the 331st Supply Company (331 Sup Coy). The existing, quite sound facilities of the 331 Sup Coy and heavy vehicle workshops are set approximately 300-400 metres apart, separated by a shallow gully.

43. Administration will be centralised and there will be a separate stores arrangement for the workshop. It is proposed to convert two existing buildings for staff amenities.

44. Within the complex the new facilities required to augment those presently existing include:

- service station
- ancillary trades workshop
- headquarters building
- stores buildings
- vehicle parks

45. A warehouse building is being constructed by Army as a separate project, to accommodate Camp Earmark stores. The balance of the warehousing requirement will be provided under Phase B.

46. The logistics complex will be contained within a security perimeter incorporating a single controlled vehicle access. The security is primarily required for the protection of vehicles and

control of stores. Personnel access will be available at the service station, the heavy vehicle workshop and the headquarters building.

Heavy Vehicle Workshop and Ancillary Trades Workshop

47. The existing heavy vehicle workshop will be modified to accommodate all repair requirements.

48. There are significant capital and ongoing cost advantages in providing a central workshop for all vehicle repairs and constructing a new ancillary trades workshop building which will contain:

- the general engineering section
- panel shop and spray painting
- welding

49. The existing workshops will be refitted to incorporate new "off the floor" offices, a tool store and workshop store, new toilets, sinks and boiling water units.

Amenities Building

50. Within the logistics complex area it is proposed to refit two existing buildings to accommodate staff amenities. The existing supply headquarters building will provide the main facility. A smaller group of personnel, primarily those working in the heavy vehicle workshop, will require a separate building. The existing workshop company store building will be adapted.

51. Both buildings will be provided with toilets, showers and locker rooms in accordance with Australian Government Occupational Health and Safety Standards. Lunch and recreation areas will be provided and, commensurate with numbers, self help kitchen facilities will be provided.

Kit Store

52. The kit store is a small store building associated with the vehicle parks, required to store the standard packs of tools and equipment (kits) that are issued with the various vehicles.

Area Service Station and Inspection Facility

53. An area service station combined with the vehicle inspection component of the workshops complex is proposed. The service station needs to be located on the security perimeter so that it can conveniently provide service to all military vehicles in the area. It also needs to adjoin the main vehicle parks to enable easy routine servicing of depot (stored) vehicles. The inspection bays have a primary relationship with the vehicle parks immediately adjoining the building to the east.

Vehicle Parks

54. A series of vehicle parks have been proposed within the logistic complex. These are primarily associated with the loan vehicle pool and the routines of servicing and repairs. The design objective has been to combine all of these areas for maximum flexibility, while maintaining the various service and control facilities on the perimeter.

Transport Operations Building

55. This is a small office building from which the Logistic Battalion's Transport Operations staff operate.

Gatehouse/Duty Room

56. The gatehouse will be located at the main entrance to the logistic area and provide the primary security for the area. It has been located to ensure the widest possible surveillance of traffic movement within the area.

Q-Stores

57. The Q-stores will be located within two existing buildings, which will be modified to accommodate the new requirements and appropriately refurbished.

Headquarters

58. The headquarters building is to be the focus for the command and administration of the unit. It is located close to the main entrance and can be approached by visitors without entering the secure area.

SNCOS' Living-in Accommodation and Mess

59. The new SNCOs' living-in accommodation and mess facilities are required to replace the existing old substandard facilities in Puckapunyal.

60. The living-in accommodation, designed around four person units, has been conceived as a single storey cluster development offering a somewhat "suburban" residential environment. It is proposed to locate carparks immediately associated with each residential unit.

61. The whole complex is to be located on a clear site which overlooks the golf course. It will be landscaped with major tree plantings.

62. The new site proposed for the SNCOs' mess would later allow the construction of a new Officers' mess adjoining and sharing the mess kitchen. (This is planned to occur during Stage 2). The kitchen in the SNCO's mess will be designed from the outset to be capable of accommodating the future addition of the Officers' mess. In the meantime it could have the additional function as a preparation kitchen for the existing Officers' mess approximately 200 metres to the south.

63. ACS advised that Australian Earthquake Code AS2121 for earthquake protection in structural design has been taken into account. This will involve checking for lateral stability and may involve some strengthening of certain parts of the structures.

Infrastructure Upgrade

64. The balance of the priority upgrading will be carried out to components of the water treatment plant, water reticulation system, sewer reticulation system, the Popples Lane treatment plant and the effluent recirculation system.

65. Upgrading will be carried out to the water supply offtake, raw water main and stormwater drains. Defence advised that the quality of the water supply from the Goulburn River is checked every two months and is up to standard. It is proposed to construct a retarding basin and to roof the clear water storage. Infill landscaping will be provided. The Committee was advised that oil and waste are collected in drums which are transported by a contractor to Melbourne for recycling.

66. Roundabouts will be provided at four intersections. Mount Street and Quentin Street will be extended to connect to Morobe Road.

SOCIO-ECONOMIC CONSIDERATIONS

Recreational Facilities

67. Although relatively isolated, Puckapunyal has a number of sporting and recreational facilities. These include a swimming pool complex, two below scale unit gymnasiums and various squash courts, tennis courts and playing fields. These facilities assist Defence Force personnel to maintain a high level of

physical fitness by augmenting training and injury rehabilitation activities. Stage 2 will include an upgraded area physical fitness centre.

Community needs

68. The facilities normally found in a rural community are not yet available at Puckapunyal. Defence recognises this shortfall and is addressing it by undertaking a study with a view to enhancing the community environment. This study is being conducted by the Australian Defence Families and Information Liaison Staff (ADFILS) using a Puckapunyal-based community liaison officer who will seek community input. Facility shortfalls will be identified and processed either as a special project or as part of the Stage 2 proposal. A replacement area library has already been identified for inclusion in Stage 2.

ENVIRONMENTAL ASPECTS

69. The proposal has been assessed in accordance with the Administrative Procedures of the *Environment Protection (Impact of Proposals) Act 1974* and its impact has been determined to be minimal.

70. The Department of Arts, Sport, the Environment, Tourism and Territories (DASETT) expressed concern that the proposed water treatment and sewerage disposal system should not result in pollution of waterways or groundwater. However, ACS assured the Committee that any effluent, even if it did not run off, would satisfy the Environment Protection Authority's requirement.

Heritage Implications

71. Although there are a number of buildings in the Puckapunyal area of Second World War vintage, they have no heritage significance and are not affected by this proposal. The original hospital buildings dated 1935 will be demolished as part of the

present health centre redevelopment which is nearing completion. The Australian Heritage Commission advised the Committee that this proposal will not affect places nominated for or entered in the Register of the National Estate.

72. The road network grid, in the vicinity of the proposed SNCOs' mess is of Second World War vintage and has been assessed as having heritage significance. This grid system will be retained and incorporated as part of the planned facilities.

CONSULTATIONS

73. Discussions have taken place throughout the project development with the following authorities:

State Electricity Commission of Victoria

Shire of Seymour

Victorian Department of Water Resources

Gas and Fuel Corporation of Victoria

Roads Corporation (Vic Roads)

Department of the Arts, Sports, Environment, Tourism and Territories

Mid-Goulburn River Management Board

Seymour Water Board; and

Rural Water Commission.

74. Staff in the relevant Army functional commands, HQ 3MD and affected units were involved during project definition and project development phases. Staff, both civilian and military, have subsequently been briefed on the project. Soldiers have been consulted on the design of the new living-in accommodation.

FINANCE AND PROGRAMMING

75. The proposal has been phased to reflect financial programming requirements and Defence's priority for works to meet the more urgent objectives of the Stage 1 proposal.

76. The Limit of Cost estimate for Stage 1 works at July 1989 prices is as follows:

Phase 'A'

. Building Works (R&F)	$5 500 000	
. External Works associated with Building Works	$1 400 000	
. Engineering Infrastructure Services	$2 600 000	
Total Phase 'A'		$9 500 000

Phase 'B'

. Building Works (SNCO's and Logistics Battalion)	$10 000 000	
. External Works associated with Building Works	$ 6 600 000	
. Engineering Infrastructure Services	$ 5 400 000	
Total Phase 'B'		$22 000 000
Stage 1 Total		$31 500 000

77. Phase A is planned for authorisation in 1990/91 and Phase B is beyond the Five Year Defence Program. Based on present programming, Phase A construction should commence in early 1991 and be complete by late 1992.

Committee's Recommendation

78. The Committee recommends the proposal for the Stage I redevelopment at Puckapunyal, Victoria at an estimated cost of $31.5m at July 1989 prices.

Conclusions and Recommendation

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

		Paragraph
1.	The Committee agrees that a need exists to provide permanent living-in accommodation at Puckapunyal to Services' Scales and Standards of Accommodation.	20
2.	The Committee also recognises the advantage of rationalising and integrating logistics facilities at the Puckapunyal Logistics Battalion.	21
3.	The upgrading of engineering services is needed to satisfy present demands and meet health and environmental standards.	22
4.	The Committee is satisfied that the staged total redevelopment at Puckapunyal is the best option available.	32
5.	The Committee recommends the proposal for the Stage 1 redevelopment at Puckapunyal, Victoria at an estimated cost of $31.5m at July 1989 prices.	78

Colin Hollis
Chairman
14 May 1990

APPENDIX A

LIST OF WITNESSES

ADORJAN, Mr Stephen Andrew, Project Manager, Australian Construction Services, 239-241 Bourke Street, Melbourne, Victoria

CHEAH, Mrs Christina Lay-See, Deputy State Manager, Australian Construction Services, 239-241 Bourke Street, Melbourne, Victoria

HELLYER, Brigadier Grahame Leslie Alwynne, Director, General Accommodation and Works - Army, Accommodation and Works Branch, Army, Russell Offices, Canberra, Australian Capital Territory

KERSHAW, Colonel Roger Andrew, Commander, Puckapunyal Military Area, Hopkins Barracks, Military Post Office, Puckapunyal, Victoria

MATHEWS, Mr Wesley Ian William, Project Architect, Australian Construction Services, 239-241 Bourke Street, Melbourne, Victoria

McCANN, Colonel Raymond Leslie, Project Manager, Major Works, Accommodation and Works Branch, Army, Russell Offices, Canberra, Australian Capital Territory

CONSTRUCTION DETAILS

DESIGN DEVELOPMENT

Urban Design

The primary design objective of buildings, carparks, engineering and new landscape works is to provide visual continuity with existing facilities within an enhanced bush environment. There is space available at Puckapunyal to realise these objectives whilst maintaining the basic functional relationships between the existing and proposed facilities.

The engineering design intention is to provide the area with infrastructure services consistent with community and environmental standards and to provide them at an economical cost with regard to the life of the system.

Special attention has been given to issues such as:

- functional convenience
- passive security
- the orientation of buildings to suit energy conservation principles
- the choice of materials, colours and building forms consistent with those used in existing buildings.

Landscape Design

The main focus of the landscape proposals is the extension of the green (watered) areas, tree planting and the enhancement of the existing bushland setting. Within these plans it is proposed to develop landscape that is easy to maintain. An approach is proposed whereby regrowth of natural bush areas will be encouraged and enhanced over an extended period for eventual handover to Army with simple, agricultural maintenance requirements. The need for weeding, pruning and protection is to be minimal.

The predominant landscape elements are effectively to be in trees and grassing. These will be more formal in proximity to the buildings and where watering will be available; and resembling the adjoining bushland where this is practical. Pathways are generally to be concrete. Fences, carparks and street furniture will be commensurate with functional requirements. Electricity reticulation will be mostly via aerial connection with local connections underground.

Site Services

Roadworks

Within this proposal the existing road network will be modified to meet new traffic flow requirements and to improve safety. Generally the existing road network is in good condition but some intersections require treatment to efficiently handle peak traffic. These works will be the principal road works required pending the development of the western entrance in Stage 2.

Stormwater

Stormwater drainage from the new facilities will be connected to the existing stormwater drainage system. No stormwater drainage infrastructure work is proposed in Phase A. Phase B work will include some upgrading of drainage from areas identified with some flooding history and construction of a retarding basin upstream of the establishment to lower the probability of flooding.

Increased development of the area causes increased run-off flow rates to the downstream marshes. It is not practical for ecological and environmental reasons to cut a drain through the marshes. Restriction of inflow by the retarding basin will help to keep the flood levels below pre-development levels.

The capacity of the existing water supply treatment plant will be increased and the distribution infrastructure upgraded. A recycled water system will be provided to reduce the need for broad area garden watering with treated water. It will reduce the cost of extracting water from the Goulburn River under the Victorian Government's user pays proposals.

Phase A work will enable the present demand to be satisfied without the need to by-pass raw water around the treatment plant during peak demand. Some watering restrictions will still apply. Replacement of some of the pipes, to improve the efficiency of the network, will also be included.

In line with normal supply standards an existing open storage reservoir will be roofed over to reduce the likelihood of contamination.

Phase B will increase the capacity of the treatment plant. It will also include further replacement of old pipes and roofing of the clear water storage reservoir.

Wastewater (Sewerage)

Mid life rejuvenation will be carried out on the system to reduce the amount of stormwater infiltration, root blockages, overflowing and grit ingress. The treatment plants are old but in reasonable condition. Additional pondage and recycling will enable the system to meet impending stricter State legislation as regards the quality of discharges to public streams. Additional facilities will be provided for settlement and removal of sludge and for testing and monitoring effluent quality. Phase A work includes the upgrading of the treatment plants and rejuvenation of part of the reticulation system.

Phase B works include further priority upgrading work at the Scrub Hill treatment plant and further rejuvenation of the reticulation system.

Effluent Recirculation

The existing effluent watering system will be upgraded and extended as follows:

Phase A: Construction of new storage ponds, balancing tank, pump station and extensions to existing reticulation.

Phase B: Further extension of mains and reticulation. Construction of balance tank pondage and pumps at the Scrub Hill treatment plant.

Security

Due to the nature of its layout, the Puckapunyal area cannot be completely secured. However, traffic to the military operational areas and the range is currently restricted outside of normal working hours and this practice will continue. The requirement for a high level of security has been identified in designated areas and these areas will be fenced off to control pedestrian and vehicular access and picqueted where appropriate under normal unit arrangement. Intruder detection will be installed in Q Stores and armouries. As a general principle, passive security at each site will be enhanced by means such as the provision of clear fields of observation within the landscaping plan and the elimination of blind spots in the building design. This will ensure that adequate security can be provided without recourse to an excessive number of stationary or roving picquets.

External Lighting

New street lighting will be provided on new roadways, security lighting to carparks and the new operational buildings. Illumination of pathways and areas around the new living-in accommodation will be provided commensurate with normal safety standards.

Fire Alarms

External cabling for fire alarms and other communication systems will be by underground multi-pair cables from each site to the Army Fire Station at Puckapunyal. The fire alarm system incorporates external manual call points.

Gas Reticulation

Provision of natural gas reticulation or supply connection is not proposed within Stage 1. LPG will be used as a primary energy source to the mess kitchens and for heating in the workshops. The existing oil fired boiler at the R&F Mess is to be retained.

Stage 2 envisages the connection to and reticulation of natural gas. At that time all oil and LPG fired equipment and appliances will be converted. Some electric heating will be retained within the existing living-in accommodation and the Defence Housing Authority stock.

ARCHITECTURAL DESIGN

Building Groups

These proposals involve developments on three separate sites. Each is either an extension of an existing group of buildings or in proximity to other related building groups. The design of the new buildings is proposed as a continuity of the forms and materials of the existing adjoining structures.

Building Quality

Durable, low maintenance facilities are proposed. Most of the buildings will be brick and readily accommodate the range of changes commensurate with individual functions.

Building Scale and Planning

All of the buildings are one or two stories in response to functional needs and the less intensive requirements of development at Puckapunyal. The building designs were developed in collaboration with the Army users.

Energy Conservation

Buildings will be designed for thermal efficiency by employing the passive solar design principles of orientation, sun shading and insulation. Careful attention to architectural and engineering detail will optimise energy usage.

Energy efficient heat pump air conditioning systems will be used in office areas and conditioned areas will be zoned to operate independently so that unoccupied areas can be turned off.

In workshops and stores provided with significant natural lighting, light fittings will be controlled by automatic dimming systems to reduce running costs. Developments in solar energy will be monitored and applied if they become economically feasible.

External Materials

The primary external materials of brickwork and metal cladding have been selected for low maintenance as well as for the direct relationship with existing structures.

Internal Materials

Internal finishes will generally be appropriate to function and economy. Brick and plasterboard walls and carpet floors in the residential, mess and areas such as the mess kitchens will be in tiles and epoxy render as appropriate. Workshop floors will incorporate a surface hardening. Toilets and washrooms will incorporate tiling and vinyl finishes as necessary.

Furniture, Fittings and Equipment

Living-in accommodation will be provided with the normal range of built-in, loose furniture and blinds in accordance with SSSA. Kitchen equipment and building systems including heating, air-conditioning and cranage will be provided as required. Some built in furniture will be provided to office, storage and workshop areas.

STRUCTURAL DESIGN

In the main the structural design of these buildings reflects the normally sound foundation in the area and the need to maintain a consistent and economical approach to building design. This has resulted in simple load bearing brick design for living-in accommodation and steel frame design for other structures.

BUILDING SERVICES

Hydraulic Services

Each of the new buildings will be connected to water and stormwater systems. Where required they will also be connected to sewerage. The workshops and vehicle wash down facility will be provided with traps to prevent the entry of oil into the sewers and the entry of oil and detergents into the stormwater system. Car park drainage will incorporate oil traps.

Air Conditioning

Air conditioning will be provided primarily to office areas.

Evaporative Cooling

Evaporative cooling will be provided to the messes and the kitchen areas.

Heating

Electric heating will be provided to the living-in accommodation. In the main LPG will be the energy source for new areas including the Workshops and Kitchens until the introduction of natural gas in Stage 2.

Ventilation

Ventilation to the various buildings will be provided in accordance with the applicable standards. Special attention will be given to areas such as the kitchens and the workshop areas including the inspection pits, spray painting area, battery room and the diesel test room.

Fire Protection

Detection systems will be provided in accordance with Australian Standards Codes and Regulations and with the requirements of the Department of Defence Facilities Manual. They will be connected to the Army's fire station.

Acoustic Treatment

Offices will be designed for appropriate noise levels, and noise due to plant in occupied spaces will be acoustically controlled. Special attention will be given to the protection of the offices located within the workshop areas.

Electric Light and Power

All of the buildings will be supplied with electricity for light and power as required. Some new substations and new high voltage reticulation will be required. The existing supply to the area is adequate for all foreseen requirements. The existing reticulation is in good condition and was recently upgraded.

Waste Disposal

Waste oil will be trapped and stored in tanks for collection by a commercial period contractor.

Garbage from all facilities will be collected and disposed of within the Puckapunyal site as part of the existing area service.

INVESTIGATIONS

Soils

Soils investigation was undertaken on one site where existing information was considered inadequate for preliminary design purposes. The balance of the site has been built upon in the past and good data are available. Check investigations will be made prior to the commencement of each element of the work.

Existing Sewerage System

A representative sample of the establishment's sewerage reticulation was smoke tested and visually inspected. The results confirmed that the system requires significant mid-life rejuvenation. The treatment facilities were also examined and found to be in relatively good condition and that they usually provide an effluent within the E.P.A. requirements. However problems are occurring with collection and digestion of sludge.

Water Pressure Study

The performance of the water distribution system was simulated by computer modelling. The effect of hydrant and sprinkler combined flows was observed. Minor revalving and upgrading at bottlenecks is required.

Road and Traffic Studies

Detailed visual inspections have revealed that the road network in the area is currently in a sound condition. Provided normal maintenance is continued, the present road surface will have a reasonable life expectancy.

A traffic study concluded that there are some intersections where vehicular movement is unnecessarily impeded during the twice daily traffic peaks. This is particularly evident at intersections where vehicles are required to turn across a major traffic flow or where there is some confusion on the part of users with regard to the priority of traffic flow. Roundabouts are proposed at the critical intersections to reduce these problems.

Sewerage Effluent Re-use

An economic feasibility study revealed that a re-use of the effluent is practical, economic and beneficial to the Army. It reduces the demand capacity required of the water treatment plant. The cost of water supply to the Puckapunyal area is thus potentially reduced.

Energy Study

A detailed evaluation of the whole area was undertaken to examine the economics in the provision of a natural gas supply to the area from the existing main 12 km away.

The study concluded that this was a feasible and desirable development. The overall capital cost and long payback period compelled the deferral of this item to Stage 2.

Structural Checks

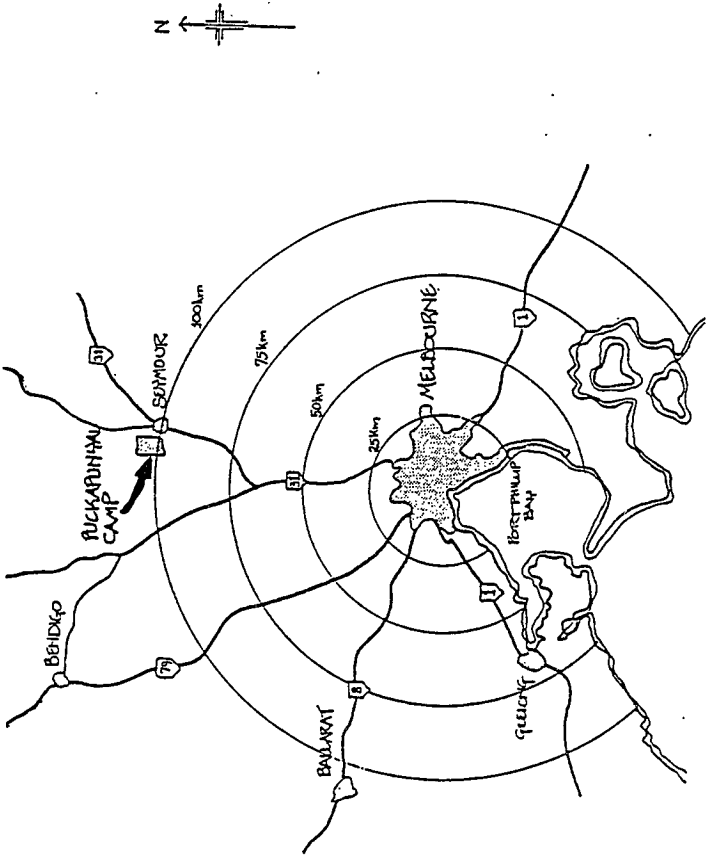
The two buildings within the logistic complex which are to be upgraded are both in sound overall condition for the functions proposed. Minor work will be required to stabilise seasonal cracking of brickwork in one building.

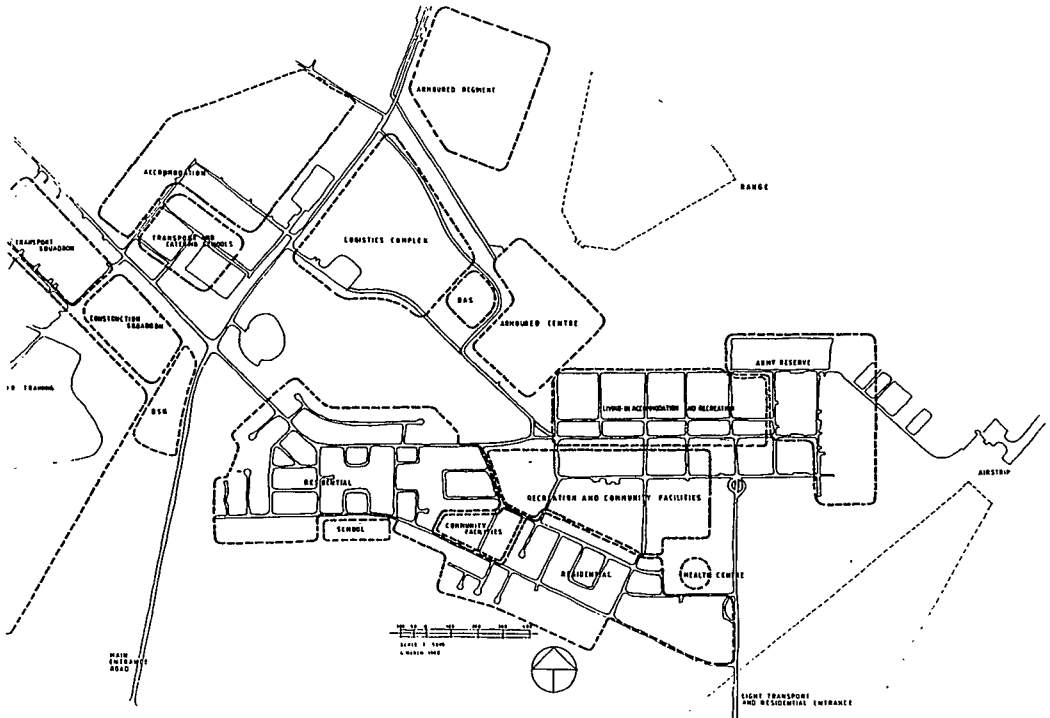
APPENDIX C

Project Drawings

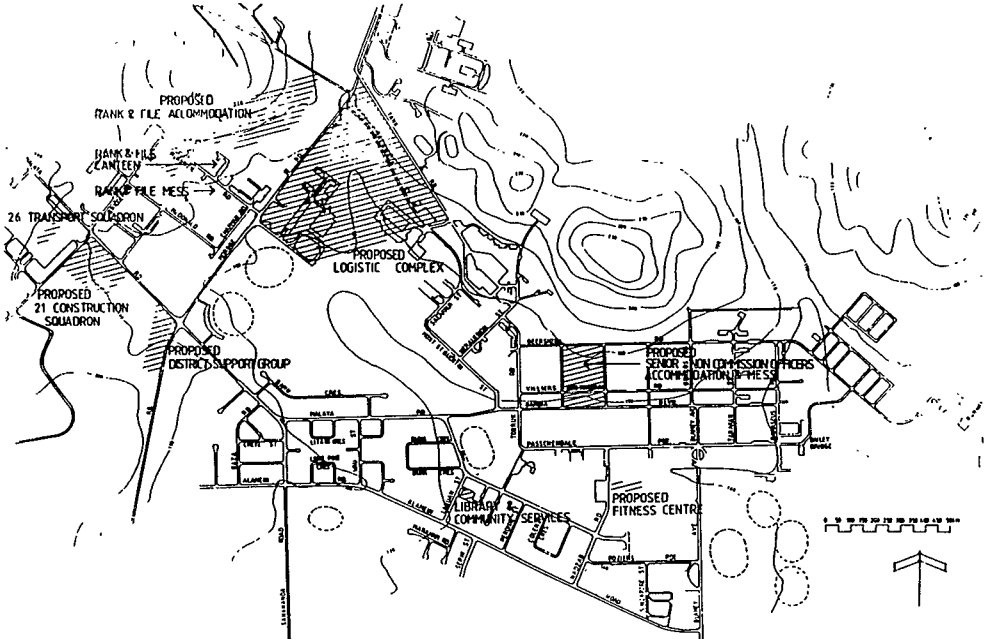
PUCKAPUNYAL AREA

LOCATION MAP

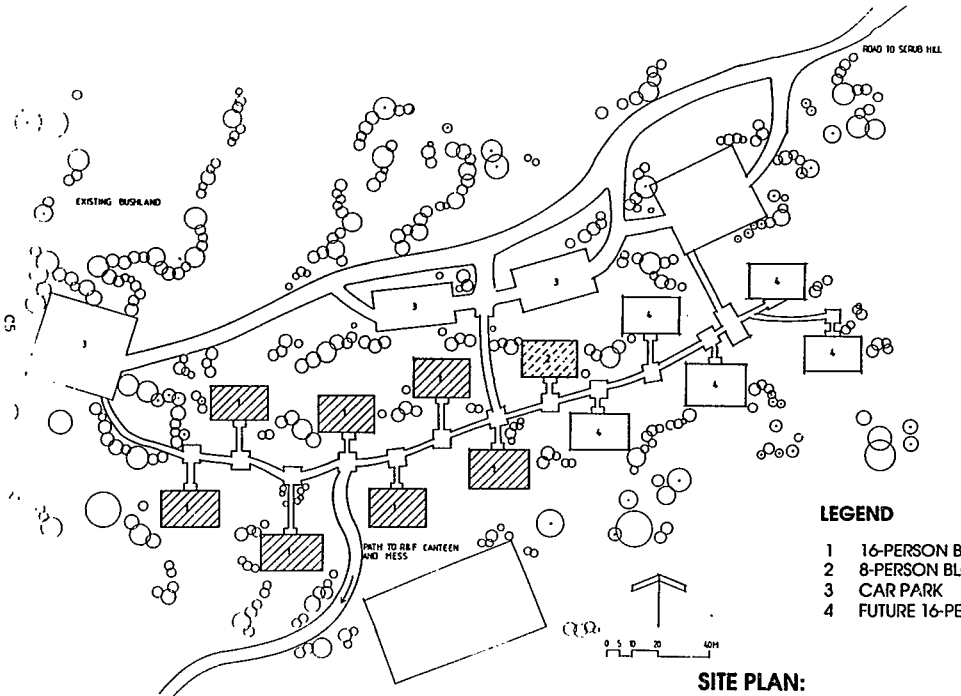




ZONE PLAN
PUCKAPUNYAL REDEVELOPMENT



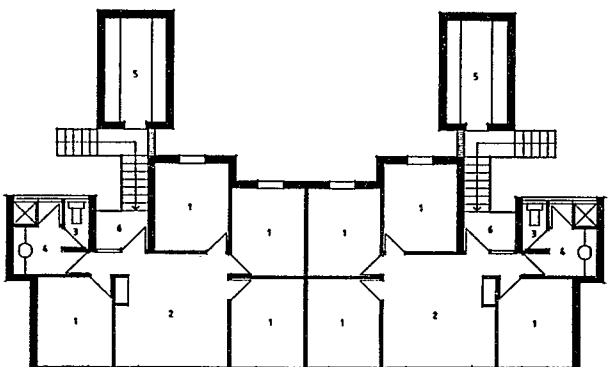
DEVELOPMENT SITES
PUCKAPUNYAL REDEVELOPMENT



LEGEND

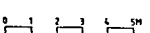
1 16-PERSON BLOCK
2 8-PERSON BLOCK
3 CAR PARK
4 FUTURE 16-PERSON BLOCK

SITE PLAN:
R&F LIVING-IN ACCOMMODATION
PUCKAPUNYAL REDEVELOPMENT

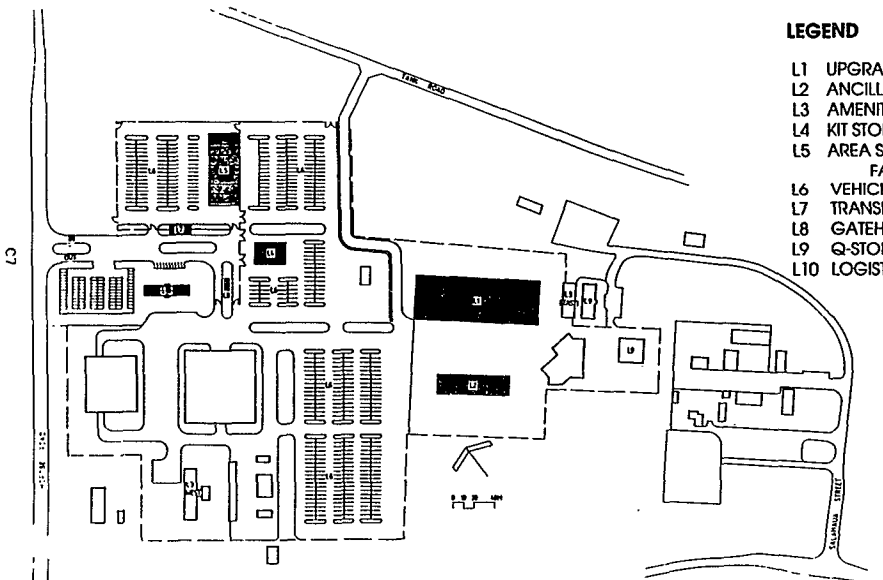


LEGEND

1 BEDROOM
2 COMMON ROOM
3 WC
4 BATHROOM
5 LAUNDRY & BOX ROOM
6 PORCH



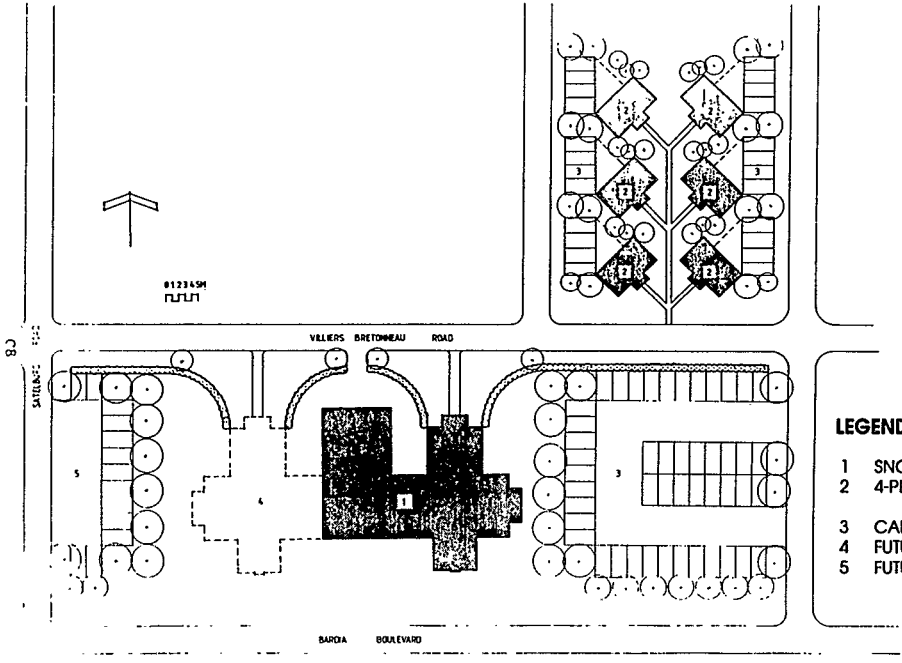
R&F LIVING-IN ACCOMMODATION
PUCKAPUNYAL REDEVELOPMENT



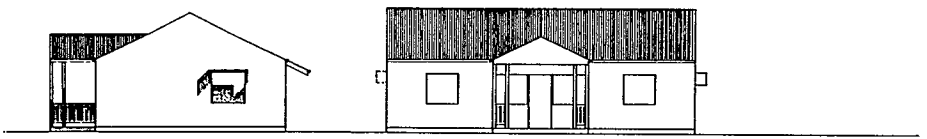
LEGEND

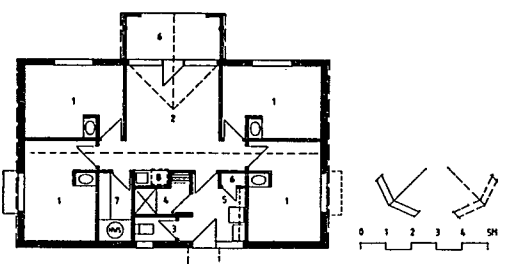
- L1 UPGRADE HEAVY VEHICLE WORKSHO
- L2 ANCILLARY TRADES WORKSHOP
- L3 AMENITIES
- L4 KIT STORE
- L5 AREA SERVICE STATION AND INSPECTI FACILITY
- L6 VEHICLE PARKS
- L7 TRANSPORT OPERATIONS BUILDING
- L8 GATEHOUSE / DUTY ROOM
- L9 Q-STORES
- L10 LOGISTIC BATTALION HEADQUARTERS

SITE PLAN:
LOGISTIC COMPLEX
PUCK PUNY 1 REDEVELOPMENT



SITE PLAN:
SNCO ACCOMMODATION & MESS
PUCKAPUNYAL REDEVELOPMENT





LEGEND

1 BEDROOM
2 COMMON ROOM
3 W.C.
4 SHOWER
5 LAUNDRY
6 CLEANER'S CUPBOARD
7 BOX ROOM
8 TEA MAKING
9 PORCH

SNCO LIVING-IN ACCOMMODATION

PUCKAPUNYAL REDEVELOPMENT