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Mary Evans

THE PARLIAMENT OF THE COMMONWEALTH OF AUSTRALIA

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS

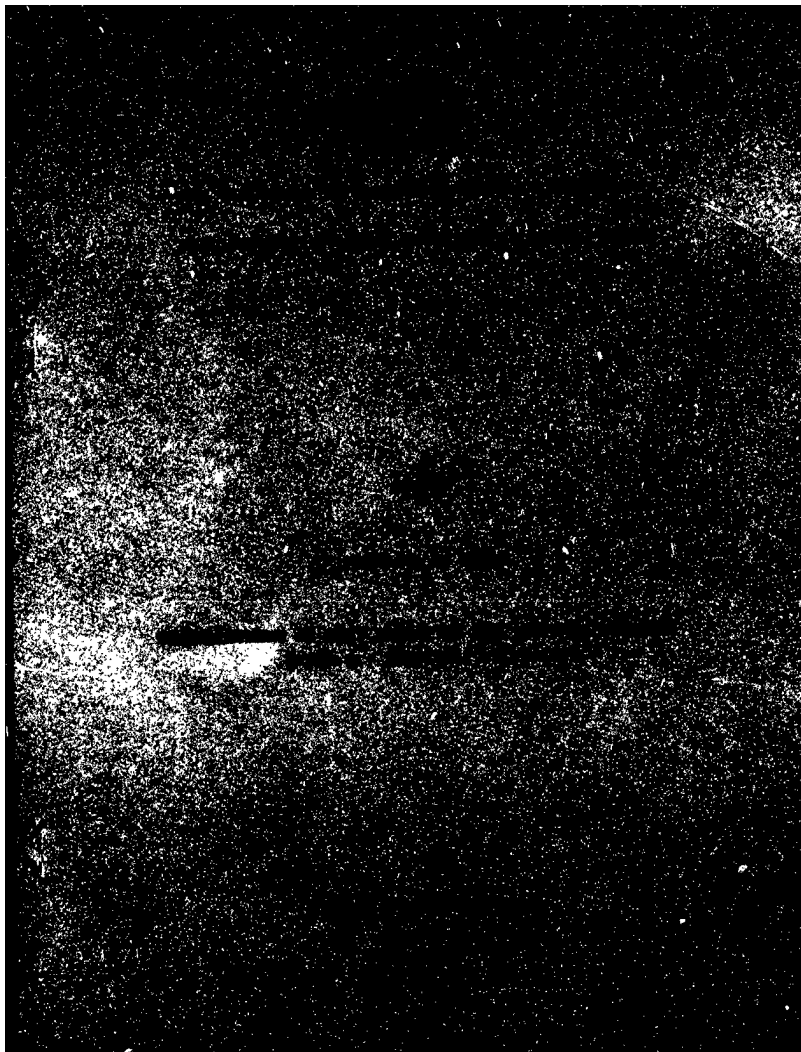
REPORT

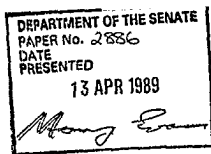
relating to the

REDEVELOPMENT OF ARMY LOGISTICS AND TRAINING COMPLEX,
STAGE 1 - BANDIANA, VICTORIA

(Seventh Report of 1989)







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REPORT

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(Seventh Report of 1989)



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

(Twenty-ninth Committee)

Mr Colin Hollis MP (Chairman)

Mr Percival Clarence Millar MP (Vice-Chairman)

Senate

Senator Bryant Robert Burns

Senator John Robert Devereux

Senator Dr Glenister Sheil

House of Representatives

Mr George Gear MP

Mr Robert George Halverson OBE MP

Mr John Graham Mountford MP

Mr William Leonard Taylor MP *

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

EXTRACT FROM THE VOTES AND PROCEEDINGS OF
THE HOUSE OF REPRESENTATIVES

NO. 87 DATED THURSDAY 3 NOVEMBER 1988

19 PUBLIC WORKS COMMITTEE - REFERENCE OF WORK - STAGE 1

REDEVELOPMENT OF BANDIANA, 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: Bandiana Redevelopment Stage 1, Victoria.

Mr West presented plans in connection with the proposed work.

Debate ensued.

Question - put and passed.

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS

REDEVELOPMENT OF ARMY LOGISTICS AND TRAINING COMPLEX, STAGE 1 - BANDIANA, VICTORIA

The House of Representatives by resolution on 3 November 1988 referred to the Parliamentary Standing Committee on Public Works for consideration and report the proposal for the first stage of the redevelopment of the Army Logistics and Training Complex at Bandiana, Victoria.

THE REFERENCE

1. The proposal submitted to the Committee is the first stage of a major redevelopment of the Army Logistics and Training Complex at Bandiana, Victoria. It is a substantial project which involves the following:

- . construction of new accommodation for all ranks and the refurbishment of existing substandard facilities
- . refurbishment of existing administrative offices and the construction of new headquarters and office buildings for several local Army units
- . replacement, refurbishment and construction of new training, warehouse and storage facilities
- . construction of new Officers and Senior Non-Commissioned Officers (Senior NCO) messes
- . upgrade of existing engineering services and roads.

2. The estimated limit of cost for the project is \$68m at August 1988 prices, with the development divided into two phases. Phase A will cost \$50m and is planned for authorisation this financial year and Phase B is estimated at \$18m with authorisation planned in 1992-93 (details of the two phases are to be found at paragraphs 25-26 under the heading 'The Proposal').

THE COMMITTEE'S INVESTIGATION

3. The Committee received written submissions, plans and drawings from the Department of Defence (Army) and Australian Construction Services (ACS) and took evidence from representatives of these organisations at a public hearing at Bandiana on 22 February 1989. A representative of the Rural City of Wodonga also appeared at the public hearing.

4. Documentation was also provided by the Albury-Wodonga Development Corporation, Australian Heritage Commission, Road Traffic Authority (Vic) and the Road Construction Authority (Vic) and is incorporated in the Minutes of Evidence.

5. Prior to the hearing the Committee was briefed on the project by Army and then conducted an inspection of the Bandiana Complex, viewing existing facilities and the proposed sites for development.

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

BACKGROUND

Location

7. Bandiana is located in Victoria about 4 km southeast of Wodonga and is divided into four separate geographical areas (North, Central, South and East Bandiana) by the Murray Valley Highway and the Wodonga-Tallangatta railway line. It extends across a valley floor and up the lower slopes of the flanking hillsides. The flat valley floor is suited to industrial and storage-type facilities as well as recreational zones. The lower slopes of the hillsides provide excellent views for office, classroom and living facilities from both North and South Bandiana.

Base Units

8. Bandiana is part of the Albury-Wodonga Military Area which includes the Army Apprentice School and the School of Military Survey at Bonegilla (12 km east).

9. It is an important Defence installation with two major logistic units, two major training establishments and three minor units; these are:

- . District Support Unit
- . Royal Australian Army Ordnance Corps Centre
- . 31st Supply Battalion
- . Royal Australian Electrical and Mechanical Engineers Training Centre
- . 4th Base Workshop Battalion
- . Albury Movement and Transport Unit
- . Army Map Depot.

10. The total number of personnel at Bandiana includes 650 permanent service staff members, approximately 530 students and 563 civilian staff, making a total of over 1700 personnel.

11. The District Support Unit (DSU) provides a wide range of local administrative support services to all units in the Albury/Wodonga Area. Its responsibilities include such matters as provision of personnel services, coordination of maintenance works, visits, communications, area development plans, administrative support for major activities and provision of logistic services within the area.

12. The Royal Australian Army Ordnance Corps Centre (RAAOC Centre) conducts individual training, trains personnel of other Corps in clerical and storeman trades, conducts Army management and tri-Service work study training and contributes to the development of Army doctrine and equipment. Over 45 different types of courses are conducted with a student throughout in 1987-88 of 1484.

13. The 31st Supply Battalion (31 Supp Bn) is one of the five supply battalions of Logistic Command located throughout Australia. The role of the Battalion is to provide supply services to Army units as necessary, and to the Navy and Air Force under Single Service Logistic Management arrangements. One of its major tasks is as a major holding depot for armoured vehicles and associated spare parts and reserve clothing supplies.

14. The Royal Australian Electrical and Mechanical Engineers Training Centre (RTC) conducts individual training and contributes to the development of Army doctrine and equipment. Over 50 different types of courses were conducted in 1987-88, most of which have a high technical content. Student throughput in 1987-88 was 1243.

15. The 4th Base Workshop Battalion (4 Base Wksp Bn) is a significant logistic facility which repairs stock from 31 Sup Bn and provides repair and recovery support to Army units in the Albury/Wodonga area. It also provides a calibration and repair facility for radiation detection equipment of the three Services, the Natural Disasters Organisation and State Emergency Services. The unit receives some 50% of its workload from 31 Sup Bn and is the primary workshop for the base repair of the Army's armoured fighting vehicles and related major assemblies. It also conducts ongoing training for third and fourth year apprentices and adult tradesmen.

16. The Albury Movement and Transport Unit (AMTU) provides the area with local road transport and freight terminal support. The unit arranges Army movement and furniture removals.

17. The Army Map Depot stores, maintains and issues the Army's stock of maps.

Existing Land Use

18. The Bandiana area is divided into four distinct areas, North, Central, East and South Bandiana, with units located as follows:

- North Bandiana : District Support Unit, Royal Australian Electrical and Mechanical Engineers Training Centre
- South Bandiana : RAAOC Centre, Army Map Depot, AMTU, and 31 Supply Battalion HQ
- Central Bandiana : 31 Supply Battalion Warehousing and Stores Distribution
- East Bandiana : 4 Base Workshop Battalion.

THE NEED

19. Bandiana underwent considerable expansion during World War II. A feature of the base is the age of many of the buildings which date from WWII and are still used for training, administrative and workshop purposes. Generally these 'temporary' facilities are of timber-frame construction clad with either galvanised iron, asbestos cement sheet or weatherboard. Many are in poor condition, inadequate for their required use and are a high maintenance liability. Indeed the annual repair and maintenance costs at the Base are in the order of \$1m.

20. The Officers and Senior NCO messes in South Bandiana are temporary, weatherboard, below-standard facilities well past their useful economic life and fall short of modern standards. Living accommodation for all ranks in North and South Bandiana is a mixture of older and more recent facilities. Some of the buildings constructed in the 1960s no longer conform with the current Services Scales and Standards of Accommodation (SSSA). Indeed the Officers accommodation at D Block inspected by the Committee in South Bandiana is of 1940s-50s vintage. Officers share adjoining rooms which are small and quite inadequate for two occupants. Much of the accommodation on the Base is substandard.

21. Some modern, permanent administrative facilities were built in the 1970s and 1980s to meet the more urgent requirements. The Bandiana area now comprises a mix of modern and old temporary structures; replacement of the latter needs to be undertaken in the context of total area redevelopment.

22. During its inspection of the Base the Committee was struck by the poor condition of many of the facilities, particularly the accommodation for all ranks.

Committee's Conclusion

23. The Committee acknowledges the fundamental need to undertake a major redevelopment of the Bandiana Complex to replace, upgrade and construct new administrative, accommodation, training, storage and workshop facilities. This is due to the obvious poor condition of the existing facilities (particularly accommodation) many of which have come to the end of their useful economic life.

THE PROPOSAL

Objectives of the Proposal

24. The objectives of the proposal for Bandiana Redevelopment Stage 1 are to:

- . provide the additional logistic, training and administrative facilities that are urgently needed for local Army units
- . provide permanent living accommodation to Services Scales and Standards of Accommodation for personnel who live on the base and longer-term students
- . provide appropriate physical training and recreation facilities
- . provide a planning and infrastructure framework on which to complete, as a second stage, the redevelopment of the Bandiana area.

Description of Building Works

25. The redevelopment of Bandiana Complex is a long-term project which has been divided into two stages. Stage 1 (this

reference) will provide those facilities most urgently required, particularly accommodation, and administrative offices. Stage 1 is estimated to cost \$68m at August 1988 prices. Construction is scheduled to commence, subject to Parliamentary approval, in mid-1989.

26. Stage 2 will include the upgrade of the Vehicle and Armament Wings at RTC, the construction of headquarters, carpenters shop, storage and servicing facilities for the Logistic Stores Complex in Central Bandiana, and the relocation of the Army Map Depot. Stage 2 will be the subject of a separate referral to the Committee.

27. Stage 1 has been divided into two separate phases: Phase A and Phase B. The phases reflect financial programming requirements and Defence's priority for works to meet the more urgent objectives of the proposal.

28. Phase A works will involve the construction of several new buildings, and the refurbishment and upgrading of existing facilities, details of which are:

29. **New Buildings**

District Support Unit and Military Police Building (North Bandiana)

- Incorporates headquarters, administrative and support facilities for DSU and the Military Police.

Physical Fitness Centre (North Bandiana)

- Includes a gymnasium, squash courts adjacent to a new sports oval and tennis courts.

RAAOC Centre HQ and Instructional Wings (South Bandiana)

- . Headquarters, classroom and administrative facilities.

Central Instruction Facility (South Bandiana)

- . Lecture theatre, model room.

Accommodation (South Bandiana)

- . Single and two-storey accommodation for approximately 200 persons for rank and file, Senior NCO and Officer staff, students and the Commanding Officer.

RAAOC Centre Q Store and Transport Compound (South Bandiana)

- . New Q store with armoury and associated offices and amenities.

RAAOC Centre Training Warehouse (South Bandiana)

Officers and Senior NCO Messes (South Bandiana)

30. Refurbishment

RTC HQ and Corps Training Wing (North Bandiana)

- . Existing headquarters building will be altered and refurbished to house the Corps Training Wing - a new HQ is to be constructed south of and linked to the existing building.

Fire Station (East Bandiana)

- . Will be relocated from South Bandiana and sited at the existing service station in East Bandiana.

RTC Electronics and Electrical Training Wing (North Bandiana)

31. Upgrading

Rank and File Accommodation (North Bandiana)

- . Upgrade of two three-storey buildings to provide 144 single-room accommodation.

Rank and File Accommodation (South Bandiana)

- . Upgrade of one barrack block to provide 24 single rooms.

'A' and 'B' Vehicle Repair Workshop (East Bandiana)

32. Phase B involves:

- . construction of a Logistic Complex Stores Distribution Centre comprising a freight terminal, stores receipt and self-service warehouse (Central Bandiana)
- . refurbishment of the Logistic Complex A Vehicle Workshop incorporating a new paint facility and construction of a new ancillary trades complex (East Bandiana)
- . construction of a new equipment receipt and issue building and relocation of existing workshop headquarters (East Bandiana).

Authorisation for Phase B is scheduled for 1992-93.

MASTER PLANNING

33. Master planning of Bandiana is being undertaken by ACS and Army concurrently with the redevelopment proposal to achieve better functional coordination and more efficient land use, site planning and building.

Zone Planning

34. A zone plan has been prepared by ACS and Army and is at Appendix C which identifies the location of various functions at the Base. Working and accommodation facilities are centred in North and South Bandiana with logistic facilities predominantly focussed in Central and East Bandiana.

35. The following factors were taken into consideration in the preparation of the zone plan by Army and ACS:

- . recognition and retention of existing facilities in effective functional relationships and locations
- . collocating vehicle storage with existing vehicle workshops at East Bandiana
- . collocating other logistic functions at Central Bandiana, where substantial capital investment in warehousing presently exists
- . existing site constraints and characteristics
- . existing rail and road systems
- . separation of living areas from working and training activities.

AMENITIES AND FACILITIES

Access Roads

36. The Murray Valley Highway is a major highway connecting Wodonga with Tallangatta that divides North and South Bandiana. At present there are two separate intersections, approximately 200 metres apart, from North and South Bandiana with the highway. These have proven to be inadequate for present traffic conditions and contribute to safety difficulties regarding access to the Base from the highway. The entry to East Bandiana from the highway is described by ACS in its submission to the Committee as dangerous.

37. It is proposed to provide one main intersection to the highway which also directly links North and South Bandiana. It will provide safe refuge for cars and larger vehicles crossing and turning into the highway.

38. New entrances from the highway to the proposed Logistic Complex at Central Bandiana and to East Bandiana will also be provided.

39. Consultations have already taken place with the Victorian Road Construction Authority (RCA) and the Road Traffic Authority (RTA). The RCA will design and construct the main entrance linking North and South Bandiana in consultation with the RTA, as well as the other access roads to East and Central Bandiana. The cost of these road accesses will be financed by the Department of Defence (Army).

Internal Roads

40. The existing internal road system and car parks are satisfactory but a number of the roads primarily in North and

South Bandiana will require upgrading and/or realignment and need to be extended to suit the new facilities.

Security

41. Base security is the responsibility of the District Support Unit. Defence representatives informed the Committee at the hearing that, because of the large but dispersed size of the Bandiana area which runs several kilometres either side of the highway, it is neither practical nor desirable to fully enclose the area with a security fence.

42. Currently security is concentrated in specific areas, such as weapons storehouses and the like. The elements of security include a patrol force and a system of intruder alarms. However, Defence commented that whilst the existing security arrangements are not quite satisfactory, there has not been any equipment stolen at the Base. During the redevelopment a security system will be put in place that concentrates upon particularly sensitive areas. However, the Committee believes that full address should be given by Army to security arrangements at the Bandiana Complex.

Committee's Recommendation

43. The Committee recommends that the Department of Defence (Army) examine and review security arrangements at the Bandiana Military Complex.

ENERGY SUPPLY

Electrical Reticulation

44. The State Electricity Commission of Victoria (SECV) owns and maintains the overhead high voltage electrical reticulation which supplies power through a large number of metering points,

at North, Central, South and East Bandiana. In order to reduce the high electricity tariff it is proposed to eliminate SECV-owned reticulation within the Base and instead take supply from the Commission at three metred points at North, South and East Bandiana. This would allow annual savings in the order of \$0.2m when the development is completed.

Gas Reticulation

45. The Gas and Fuel Corporation owns and maintains the gas system presently in use at North and South Bandiana. This system will be upgraded and extended for increased loads at new and refurbished buildings, particularly the accommodation areas. Three new high-capacity meters will be located at site boundaries at North, Central and East Bandiana to capitalise on lower tariffs reducing heating costs. Additionally the Corporation mains will be extended to the new Logistic Complex at Central Bandiana during Phase B and will replace the existing LPG system in East Bandiana.

Heating of Buildings

46. ACS advised the Committee that the new buildings will be designed for thermal efficiency employing passive solar design principles of orientation, sunshading and insulation.

47. Energy efficient heat pump air-conditioning systems will be used in the buildings. The air-conditioned areas will be zoned to operate independently so that in unoccupied areas the system can be turned off.

48. Natural gas fired heating systems, shown to be the most cost-efficient systems, will be used in all buildings. Spot heating of industrial and storage workstations, rather than space heating, will reduce energy consumption.

49. ACS identified sleeping accommodation areas as one of the most important areas for heating and considered both gas and electric heating. Heating in the accommodation areas will be by gas-fired boiler, with water being piped to each room which will contain a regulated radiator. ACS advised that this system provides both the lowest annual capital cost and the lowest annual energy cost.

Committee's Conclusion

50. The Committee is satisfied that the redevelopment proposal meets the numerous and diverse requirements of Army at the Bandiana Military Complex particularly the replacement and improvement of many outdated facilities, especially accommodation.

ENVIRONMENTAL CONSIDERATIONS

51. The proposed works replace or improve existing buildings and operations within an established military area and both Army and ACS advise that they will not have an adverse effect upon adjoining areas.

52. The proposal has been assessed in accordance with the Administrative Procedures of the Environmental Protection (Impact of Proposals) Act 1974 and its impact has been determined as minimal.

Drainage

53. It was pointed out to the Committee during the inspection of the Base that the proposed Logistic Complex Stores Distribution Centre in Central Bandiana is to be built over a very large water channel.

54. ACS advised that the gully is part of the existing stormwater system which will be filled and rerouted under the redevelopment proposal. ACS assured the Committee that water would be diverted by the fill and rerouted channel system and that it does not foresee any subsurface water problems at the site of the Centre.

55. Despite these assurances the Committee still retains some reservations about the proposal to build part of the Distribution Centre over a drainage channel (noting that the channel is to be diverted).

Committee's Recommendation

56. The Committee recommends that Australian Construction Services and Army thoroughly re-examine the proposal to locate part of the Logistic Complex Stores Distribution Centre in Central Bandiana over an existing drainage channel.

HERITAGE

57. The Australian Heritage Commission (AHC) advised the Committee that the proposal does not affect any buildings or places in or nominated for the Register of the National Estate. Indeed no buildings on the Base area have been listed by the Commission, although nearby at East Bonegilla Camp, Block 19 has been included on the interim register. This is currently the subject of negotiations between the AHC and the Department of Defence.

CONSULTATIONS

58. ACS and the Department of Defence (Army) have consulted with relevant State and local government authorities about the

proposal. These organisations are:

- . Albury-Wodonga Development Corporation
- . Rural City of Wodonga
- . State Electricity Commission of Victoria
- . Gas and Fuel Corporation
- . Road Traffic Authority (Victoria)
- . Road Construction Authority (Victoria).

59. A joint Defence (Army) and ACS presentation of the proposed project was made at a public meeting at the Bandiana Area Theatre on 25 August 1988 which was well attended and received considerable media attention.

CONSTRUCTION PROGRAM

60. The redevelopment of the Bandiana Complex is a long-term project which has been divided into two discrete stages. Stage 1 works which are the subject of this reference have been grouped into two phases. It is planned to commence construction of phase A in mid-1989 and phase B in 1992-93, with completion in mid-1995.

LIMIT OF COST

61. The limit of cost estimate for Stage 1 at August 1988 prices is:

Phase A

North Bandiana	\$19.3m
South Bandiana	\$28.1m
East Bandiana	<u>\$ 2.6m</u>
Total Phase A	\$50m

Phase B

Central Bandiana	\$ 7.8m
East Bandiana	<u>\$10.2m</u>

Total Phase B	\$18.0m
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62. The total estimated cost for Stage 1 of the Bandiana redevelopment project is \$68m at August 1988 prices.

Committee's Recommendation

63. The Committee recommends the construction of works involved in the redevelopment of the Bandiana Military Complex, Stage 1 at a total estimated cost of \$68m at August 1988 prices.

CONCLUSIONS AND RECOMMENDATIONS

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

Paragraph

1. The Committee acknowledges the fundamental need to undertake a major redevelopment of the Bandiana Complex to replace, upgrade and construct new administrative, accommodation, training, storage and workshop facilities. This is due to the obvious poor condition of the existing facilities (particularly accommodation) many of which have come to the end of their useful economic life. 23
2. The Committee recommends that the Department of Defence (Army) examine and review security arrangements at the Bandiana Military Complex. 43
3. The Committee is satisfied that the redevelopment proposal meets the numerous and diverse requirements of Army at the Bandiana Military Complex particularly the replacement and improvement of many outdated facilities, especially accommodation. 50
4. The Committee recommends that Australian Construction Services and Army thoroughly re-examine the proposal to locate part of the Logistic Complex Stores Distribution Centre building in Central Bandiana over an existing drainage channel. 56

5. The Committee recommends the construction of works involved in the redevelopment of the Bandiana Military Complex, Stage 1 at a total estimated cost of \$68m at August 1988 prices.

63



Colin Hollis
Chairman

6 April 1989

APPENDIX A

LIST OF WITNESSES

- BAIRSTOW, Mr Robert Stanley, Acting Project Manager - Army,
Australian Construction Services, Department of
Administrative Services, Tivoli Court, 239-241 Bourke
Street, Melbourne, Vic 3000
- BREWER, Colonel Colin John, Area Commander Albury-Wodonga
Military Area and Commandant, Army Apprentice School,
Latchford Barracks, Bonegilla, Milpo, Vic 3693
- CAMPBELL, Lieutenant Colonel James Kenneth Hunter, Commanding
Officer and Chief Instructor, Royal Australian Army
Ordnance Corps Centre, Department of Defence, Army,
Albury-Wodonga, NSW 2640
- HELLYER, Brigadier Grahame Leslie, Director-General,
Accommodation and Works - Army, Department of Defence,
Russell Offices, Canberra, ACT 2600
- HOGAN, Mr Warren Robert, Acting Assistant State Manager,
Victorian-Tasmania Region, Australian Construction
Services, Department of Administrative Services, Tivoli
Court, 239-241 Bourke Street, Melbourne, Vic 3000
- MCCANN, Lieutenant Colonel Raymond Leslie, Project Manager,
Accommodation and Works - Army, Department of Defence,
Russell Offices, Canberra, ACT 2600
- PAGE, Mr William George, City Engineer-Planner, Rural City of
Wodonga, Hovell Street, Wodonga, Vic 3690
- PLATT, Mr Paul Richard, Principal Architect, Australian
Construction Services, Department of Administrative
Services, 470 Northbourne Avenue, Dickson, ACT 2602

CONSTRUCTION DETAILS

Structural Design

Accommodation blocks will be of single and two-storey load-bearing brick construction on raft slabs and with timber-framed roofs.

New warehousing and workshops will have braced steel-framed structures with sawtooth roofs and raft slabs.

The headquarters, instructional, administrative and office buildings will generally be of two-storey steel-framed construction with concrete floors.

The existing 'A' and 'B' Vehicle Repair Workshops generally consist of steel and timber columns, beams, trusses and concrete floors. A structural assessment has found all steelwork to be satisfactory. Some timber elements have been found to be substandard and will be replaced or strengthened as necessary.

The RTC Electronics and Electrical Training Wing has a structurally adequate timber frame in good condition. It will be renovated and will include a two-storey steel-framed structure, with concrete upper floor, along two sides of the building.

Design Objectives

The design of buildings in each precinct will not only create a distinct identity and character for that area but also provide continuity between areas by developing an architectural theme derived from the existing sawtooth and gabled roof forms of industrial, stores and commercial buildings at Bandiana.

Architectural Quality

Buildings will be of simple and robust design, utilising durable and low maintenance materials. Detailing will be controlled and, where possible, standardised for all buildings.

Building Scale

New buildings will be of single and two-storey construction to fit into the rural hillside/valley setting.

External Materials

Generally, walls will be brick for accommodation, brick and panels for mess and commercial-type buildings and metal cladding for workshops and stores. Roofing will be insulated metal. Prefinished aluminium-framed windows will have tinted or reflective glazing.

Internal Finishes

Internal wall finishes will generally be brick/blockwork in accommodation, exposed metal cladding in workshop and storage areas and plasterboard in office and instructional areas. Walls will be painted or tiled as appropriate. Offices, classrooms and residential areas generally will be carpeted and heavily trafficked areas finished with sheet linoleum. Storage and workshop floors will be hardened concrete and computer floors will be provided in computer rooms. Ceilings will be painted plasterboard.

Internal colour schemes will be selected to provide a pleasant working environment consistent with ease of maintenance.

Furniture, Fittings and Equipment

Bedroom and special classroom furniture and built-in cupboards will be provided and mechanical equipment and fittings will be standardised where possible to minimise installation and maintenance costs.

ENGINEERING SERVICES

Water Supply

The Rural City of Wodonga provides water to a Defence-owned water storage facility. The existing water reticulation system is planned to be connected to the Albury-Wodonga Development Corporation mains. Ring mains will be installed around the new developments for reliability, fire fighting and maintenance purposes.

Sewerage

Defence operates and maintains its own sewage treatment plant. Most of the reticulation system is structurally sound and graded, and will be retained and repaired to alleviate rainwater infiltration and extended to service the new facilities.

Electrical Power and Lighting

Workshops and other buildings with a high electrical demand will be provided with a substation, from which power will be supplied underground to other buildings.

Classrooms will be provided with power and computer and audiovisual ducting to all work stations. Electrical/electronic classrooms will be provided with power of various AC and DC voltages.

Artificial lighting will be provided by fluorescent or discharge lamps and wiring in existing buildings will be replaced.

Fire Protection

Thermal alarms will be provided in messes, instructional and office areas and in warehouses not requiring sprinklers. Additionally smoke detectors will be installed in computer areas.

The Distribution Centre and self-service warehouse will incorporate sprinkler systems and those systems in existing buildings will be extended/upgraded where necessary.

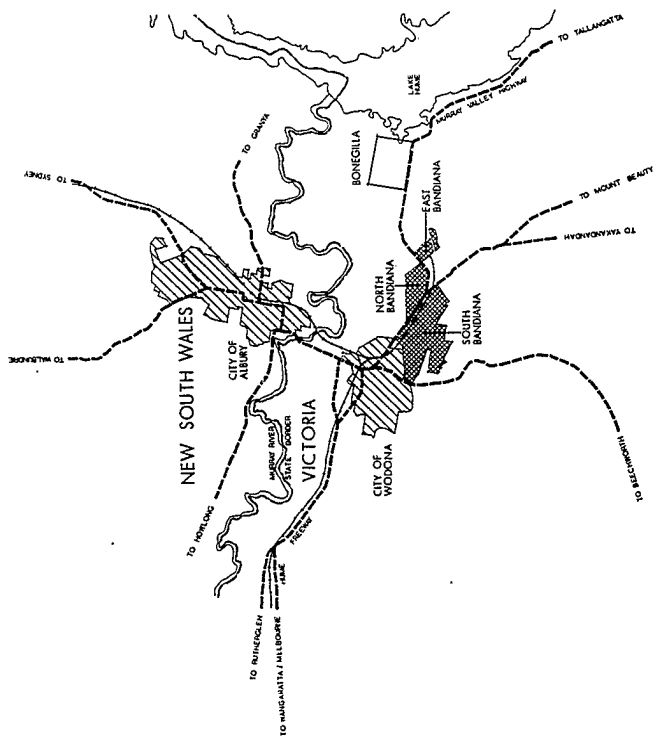
Internal hydrants and fire-hose reels will be provided to supplement fixed detection/protection systems in the new facilities. Existing external hydrants will be augmented.

APPENDIX 3

ZONE PLAN AND PROJECT DRAWINGS

Figure

1	Military Area Locality Plan	
2	Military Area Zone Plan	
3	Area Facilities Site Plan	North Bandiana
4	Logistic Complex Site Plan	Central Bandiana
5	RAAOC Centre Site Plan	South Bandiana
6	Logistic Complex Site Plan	East Bandiana



MILITARY AREA
LOCALITY PLAN

BANDIANA

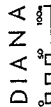
LEGEND

NEW FACILITIES

- 1 DSU & MILITARY POLICE
- 2 PHYSICAL FITNESS CEN
- 3 TENNIS COURTS
- 4 OVAL
- 5 RTC HQ AND CORPS
- 6 TRAINING WING
- 7 RTC ELECTRONICS
- 8 ELECTRICAL WING
- 9 UPGRADED R & F
- 10 ACCOMMODATION

EXISTING FACILITIES

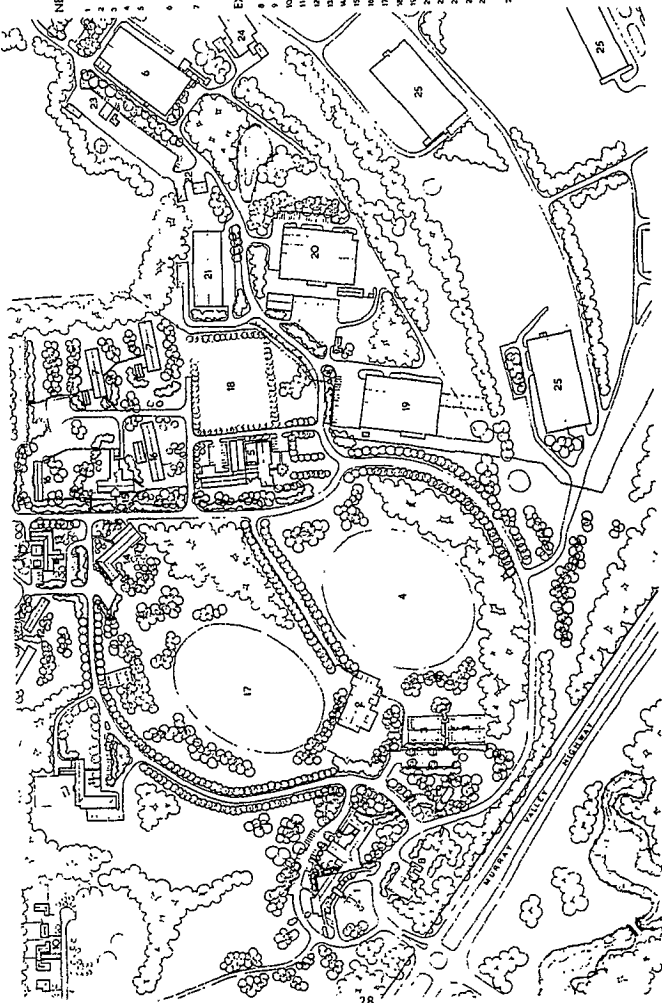
- 11 POST OFFICE
- 12 CHAPEL
- 13 MARSHED QUARTERS
- 14 OFFICERS MESS
- 15 SICO ACCOMMODATION
- 16 SICO MESS
- 17 SOLDIERS CLUB
- 18 R & F MESS
- 19 R & F ACCOMMODATION
- 20 OVAL
- 21 PARADE GROUND
- 22 RTC ARMAMENT WING
- 23 RTC VEHICLE WING
- 24 RTC Q STORE
- 25 TANK WASH
- 26 RECOVERY
- 27 RTC RAPHER
- 28 TRAINING FACILITY
- 29 WAREHOUSE



AREA FACILITIES • DSU • RTC
SITE PLAN

3

NORTH BANDIANA



LEGEND

NEW FACILITIES

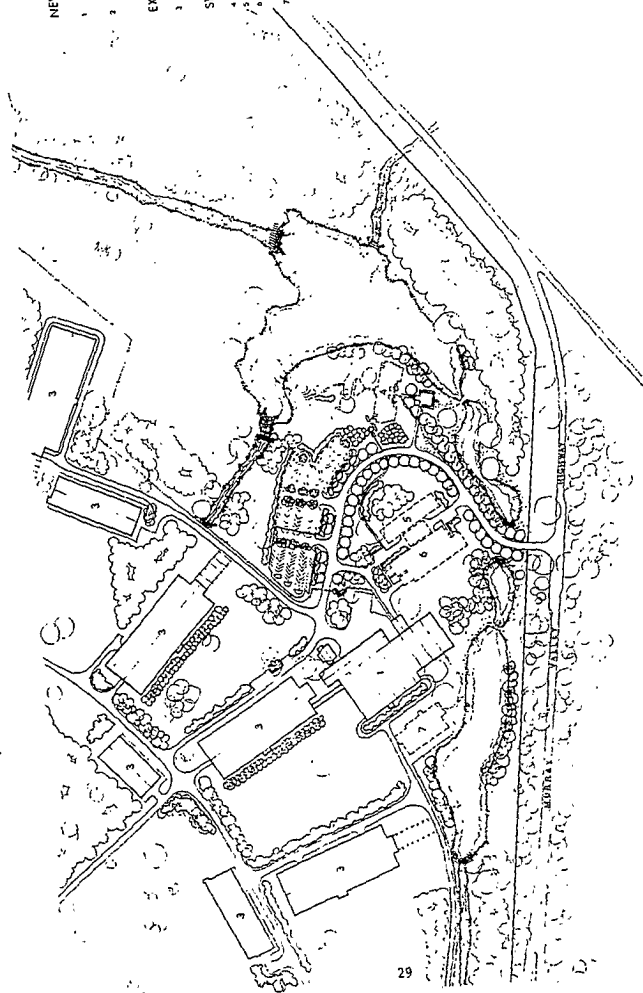
- 1 DISTRIBUTION CENTRE
- 2 SELF SERVICE WAREHOUSE
- 3 ACCESS CONTROL AND DIRT ROAD

EXISTING FACILITIES

- 1 WAREHOUSE

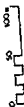
STAGE 2 FACILITIES

- 4 LOGISTIC COMPLEX HC
- 5 CARPENTERS WORKSHOP
- 6 STORE AND CAMP
- 7 FARMER STORE
- 8 TREATMENT AND INC.



LOGISTIC COMPLEX SITE PLAN

CENTRAL BANDIANA



LEGEND

NEW FACILITIES

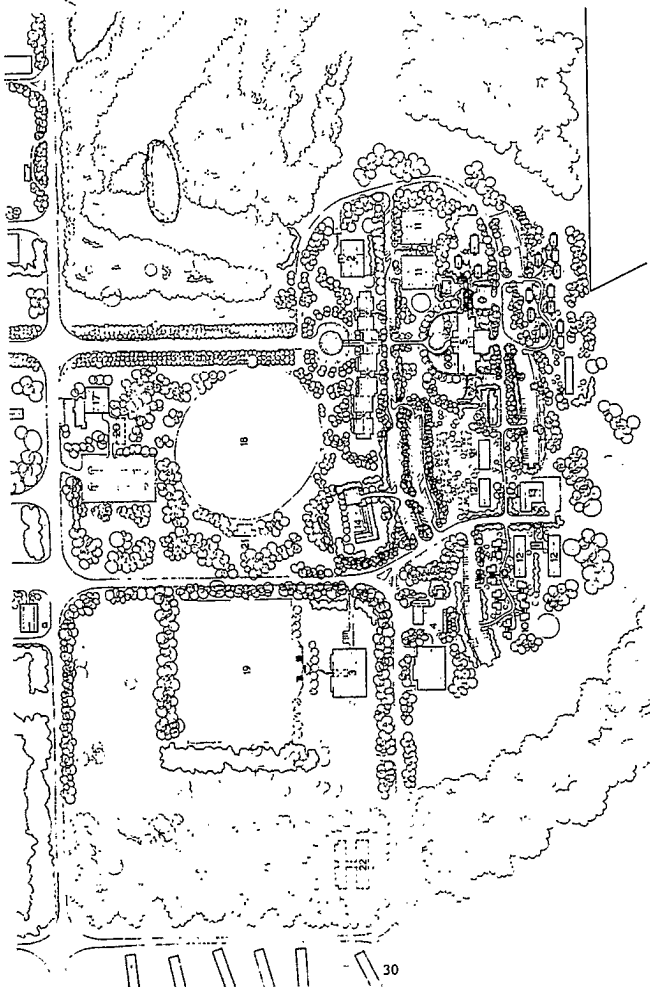
- 1 R.A.O.C. CENTRE HQ & INSTRUCTIONAL WINGS
- 2 CENTRAL INSTRUCTIONAL FACILITY
- 3 TRAINING WAREHOUSE
- 4 Q STORE AND
- 5 VEHICLE COMPOUND
- 6 OFFICERS AND SNCO HQ
- 7 OFFICERS ACCOMMODATION
- 8 OFFICERS AND SNCO
- 9 STUDENT ACCOMMODATION
- 10 SNCO ACCOMMODATION
- 11 UPGRADER R AND F
- 12 R.A.O.C. ACCOMMODATION
- 13 R.A.O.C. ACCOMMODATION
- 14 R.A.O.C. HES
- 15 SOLDIERS CLUB
- 16 MEDICAL CENTRE
- 17 SNCO ACCOMMODATION
- 18 21 SUPPLY BATTALION HQ
- 19 OWL
- 20 PARADE GROUND

EXISTING FACILITIES:

- 21 R.A.O.C. ACCOMMODATION
- 22 R.A.O.C. HES
- 23 SOLDIERS CLUB
- 24 MEDICAL CENTRE
- 25 SNCO ACCOMMODATION
- 26 21 SUPPLY BATTALION HQ
- 27 OWL
- 28 PARADE GROUND

STAGE 2

- 29 AMBUSH TRAINING W
- 30 PAVILION
- 31 PAVILION
- 32 PAVILION TRAINING WING



SOUTH BANDIANA

R.A.O.C. CENTRE
SITE PLAN

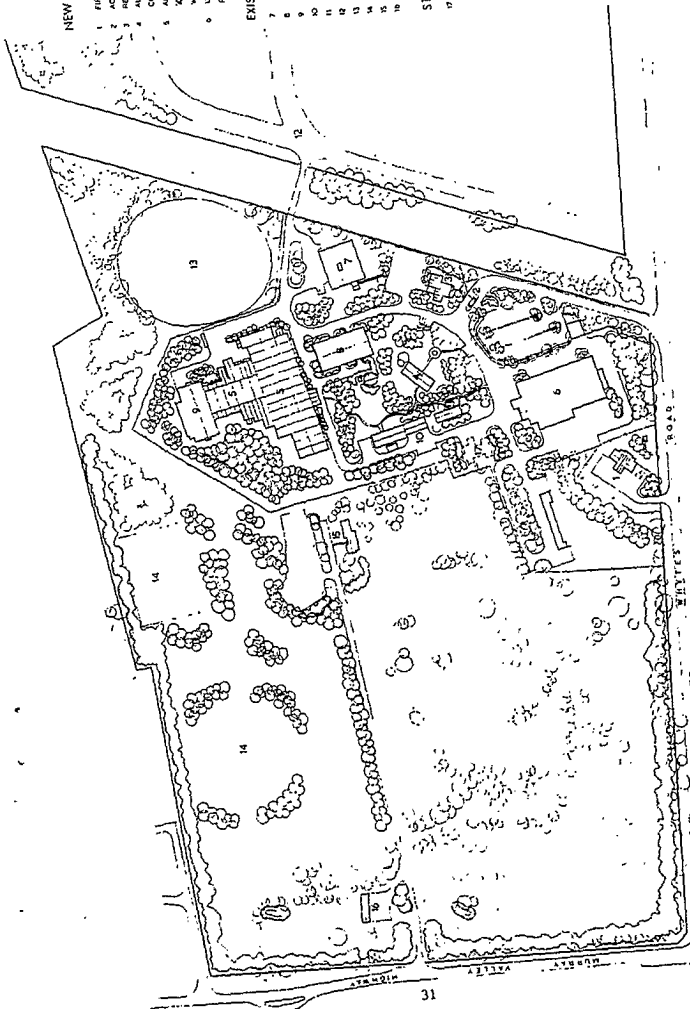
LEGEND

NEW FACILITIES

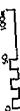
- 1 FIRE STATION
- 2 ACCESS CONTROL
- 3 RECEIPTS AND ISSUES
- 4 ALTERED PRODUCTION
- 5 CONTROL
- 6 ANCILLARY BUILDINGS AND WORKSHOPS
- 7 VEHICLE REPAIR
- 8 UPGRADED "B" VEHICLE REPAIR WORKSHOP

EXISTING FACILITIES

- 9 EHS WORKSHOP
- 10 VEHICLE PARTS STORE
- 11 MVA WORKSHOP
- 12 O. STORE
- 13 RADIAC
- 14 TEST TRACK
- 15 OWL
- 16 SPORTS GROUNDS
- 17 PAVILION
- 18 GROUNDWORKS MAINTENANCE
- 19 STAGE 2
- 20 STEAM CLEAN



EAST BANDIANA



LOGISTIC COMPLEX
SITE PLAN

