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THE PARLIAMENT OF THE COMMONWEALTH OF AUSTRALIA

J. J. Adger
Clerk of the Senate

Parliamentary Standing Committee on Public Works

REPORT
relating to the
DEVELOPMENT
OF ARMY SITE STAGE 1
BONEGILLA

Victoria

(SIXTH REPORT OF 1978)

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THE PARLIAMENT OF THE COMMONWEALTH OF AUSTRALIA
PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS

R E P O R T
relating to the
DEVELOPMENT OF ARMY SITE
STAGE 1,
BONEGILLA,
Victoria
(Sixth Report of 1978)

Australian Government Publishing Service
Canberra 1978

MEMBERS OF THE PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS

(Twenty-fifth Committee)

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EXTRACT FROM

THE VOTES AND PROCEEDINGS OF THE HOUSE OF REPRESENTATIVES,
NO. 54 DATED 27 SEPTEMBER 1978

- 14 PUBLIC WORKS COMMITTEE - REFERENCE OF WORK - ARMY SITE STAGE 1, BONEGILLA, VIC.: Mr. McLeay (Minister for Construction), 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 investigation and report: Development of army site stage 1, Bonegilla, Vic.

Mr. McLeay presented plans in connection with the proposed work.

Question - put and passed.

WITNESSES

Bowden, B., Esq., Assistant Secretary (Defence), Department of Construction, John Curtin House, Brisbane Avenue, Canberra, Australian Capital Territory

Buckham, M.W., Esq., First Assistant Secretary, Facilities Division, Department of Defence, Russell Offices, Canberra, Australian Capital Territory

Chamberlain, Councillor G.R., Mayor of the Rural City of Wodonga, Municipal Offices, Rural City of Wodonga, Howell Street, Wodonga, Victoria

Collings, D.G., Esq., Shire Secretary, Shire of Mornington, P.O. Box 78, Mornington, Victoria

Craig, G.F., Esq., Chairman, Albury-Wodonga Development Corporation, P.O. Box 913, Albury, New South Wales

Hannon, B.J., Esq., Project Director, Civil & Civic Pty Ltd., P.O. Box 244, Canberra City, Australian Capital Territory

Hubbard, Councillor D.T., Shire of Mornington, 99 Wimbourne Avenue, Mt. Eliza, Victoria

Kruck, Chief Commissioner S.L., Everyman's Welfare Service, C/- P.O. Box 728, Wagga Wagga, New South Wales

Laing, A., Esq., Project Manager, Department of Construction, Tivoli Court, 239 Bourke Street, Melbourne, Victoria

Lennon, W.W., Esq., Manager - New Business (Canberra), Civil & Civic Pty Ltd, P.O. Box 244, Canberra City, Australian Capital Territory

Marshman, R.L., Esq., Director, Growth Centres Branch, Department of National Development, P.O. Box 5, Canberra, Australian Capital Territory

McLean, Colonel R.A. (Ret'd), Albury-Wodonga Development Corporation, P.O. Box 913, Albury, New South Wales

Phillips, Colonel P.R., Director of Personnel Plans (Army), Department of Defence, Russell Offices, Canberra, Australian Capital Territory

Sarah, Lt. Colonel I.R., Project Manager (Major Projects), Accommodation and Works - Army, Department of Defence, Russell Offices, Canberra, Australian Capital Territory

Wheeler, Councillor D.F., Shire of Mornington, 7 Queen Street,
Mornington, Victoria

Wiseke, J.C., Esq., Director, Department of Construction,
Tivoli Court, 239 Bourke Street, Melbourne, Victoria

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PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS

DEVELOPMENT OF ARMY SITE STAGE 1,
BONEGILLA, VICTORIA

R E P O R T

By resolution on 27 September 1978 the House of Representatives referred to the Parliamentary Standing Committee on Public Works for investigation and report to the Parliament the proposal for the development of Army Site Stage 1, Bonegilla, Victoria.

The Committee has the honour to report as follows:

THE REFERENCE

1. The proposal is for the construction of new permanent living, working and recreational facilities to accommodate:
 - the Army Apprentices School at present located in sub-standard accommodation at Balcombe, Victoria;
 - the School of Military Survey presently located in temporary accommodation at Bonegilla;
 - recruit training for the Womens Royal Australian Army Corps (WRAAC) which is currently carried out in temporary accommodation at George Heights, N.S.W.
2. The main elements involved in the proposal are:
 - instructional facilities;

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- messing and sleeping accommodation for all ranks;
- administration, stores and transport facilities;
- combined dental and medical centre;
- indoor and outdoor sporting facilities;
- ten on site married quarters.

3. Low rise buildings are proposed throughout the complex with a maximum of three storeys. Brick construction is proposed for the greater number of the buildings with a few of the larger buildings in concrete. These latter buildings, will be faced with coloured panels with a mixture of brickwork and timber panels to continue the domestic type treatment throughout the complex.

4. The estimated cost of the proposal when referred to the Committee was \$29.5 million at July 1978 prices.

THE COMMITTEE'S INVESTIGATION

5. The Committee received written submissions from the Department of Defence, the Department of Construction, the Rural City of Wodonga, the Shire of Morrongton, Everyman's Welfare Service, and Civil and Civic Pty Ltd. A joint submission was also received from the Albury-Wodonga Development Corporation and the Department of National Development. Evidence was taken from representatives of the above organisations at public hearings in Wodonga on 1 November 1978 and in Canberra on 7 November 1978. A written submission was also received from Mr J.D. Richards proposing that the complex be built on the Langwarrin Military Reserve, Victoria.

6. On 16 October 1978 the Committee inspected the facilities at the Telecom Engineering Training Centre at Toorong to gain an insight into how another major organisation conducts its apprenticeship training. Following an inspection of the Langwarrin Military Reserve, which had been suggested as an alternative site, the Committee was given a detailed briefing and inspection of the Army Apprentices School at Balcombe.

7. Prior to the public hearing on 1 November the Committee inspected the existing facilities at the School of Military Survey and the sites for the proposed development at Bonegilla.

8. The Committee's proceedings will be printed as Minutes of Evidence.

BACKGROUND

9. Army Apprentices School. The Army Apprentices School (AAS) was established in 1948. It provides education of a military, technical and general nature for selected applicants aged 15 to 17 who volunteer for service in the Australian Regular Army as apprentice tradesmen and qualifies students to take their place in units for further training and employment as tradesmen. To date some 3,500 apprentices have graduated from the School. The AAS was initially staffed by military and Commonwealth Public Service Staff.

10. Since the Victorian State Government Education (Army Apprentices School) Act of 1969, the trade training aspects of the AAS curriculum have been under the auspices of the Victorian Education Department. The majority of the civilian instructional staff are now Victorian Education Department personnel and the trade qualifications obtained by the Army apprentices are granted by the Industrial Trade Commission.

11. The School is organised on the basis of a headquarters and administrative element with five technical or trade training wings. The School also has a general education wing and, in addition, provides apprentices with a normal course of military recruit training. The apprentices are organised for administrative and command purposes into an Apprentice Battalion of four companies.

12. The School uses the full-time (continuous block release) concept of instruction to provide apprentice training for a number of Corps in certain basic trade employments, viz:

- Vehicle Mechanic
- Fitter and Turner
- Carpenter and Joiner

- Plumber and Gas Fitter
- Electrical Mechanic
- Electronic Tradesman.

13. Apprenticeship training for all but Electronic Tradesmen is conducted on the basis of two years full time training at the School and two years practical experience on the job. Electronic Tradesmen undertake three years full time training at the School and one year in units. On completion of their training, both formal and on the job, the apprentices are qualified as tradesmen and trained soldiers and then pursue their career and progress in rank within their trade and allotted Corps. Army personnel belonging to apprentice trades and associated progression trades comprise 7% of the Army's Other Ranks.

14. The Army Adult Tradesmen Scheme. The Army Adult Tradesmen Scheme (AATS) provides approximately one year of formal training at the Royal Australian Electrical and Mechanical Engineers Training Centre, Bandiana, followed by five years of on the job training in a technical unit before the granting of trade qualifications. It supplements the AAS input to compensate for the long lead time involved in producing tradesmen from that School. Direct entry of soldiers with prior civilian qualifications supplies only a limited number of tradesmen each year.

15. Planning Figures for Tradesmen. From 1983 the estimated annual requirement for tradesmen from the AAS and from AATS in 1982-83 is as follows:

<u>Trade</u>	<u>AAS</u>	<u>AATS</u>	<u>Total</u>
Vehicle Mechanic	60	75	135
Fitter & Turner	44	48	92
Carpenter & Joiner	29	-	29
Plumber & Gas Fitter	14	-	14
Electrical Mechanic	24	-	24
Electronic Tradesman	53	45	98
Totals:	<u>224</u>	<u>168</u>	<u>392</u>

16. The student population of the AAS is planned to be 669 by January 1983, comprising 310 apprentices in their first year of training, 291 in their second year and 68 in their third year.

17. WRAAC School (Recruit Training). The Womens Royal Australian Army Corps (WRAAC) School, established in 1952, has been based at Georges Heights since 1959. The Recruit Training Wing of the School is proposed for relocation to Bonegilla. It trains female recruits at a basic military induction course before they proceed to initial employment training at various Corps schools.

18. It is planned to train 260 other rank female recruits each year. The student population at any one time will be 54 based on two courses of 27 being conducted at the same time, each course being of seven weeks duration.

19. School of Military Survey. The School of Military Survey moved from Balcombe to allow for expansion of the AAS in late 1965 and was established in its present temporary accommodation at Bonegilla where it has operated since 1966. The School provides instruction in survey techniques and equipment, lithography, cartography and photogrammetry (including aerial photography, astronomy and related subjects). Courses include basic trade instruction and trade and professional advancement courses. The School complement at any one time is 116 comprising 16 officers, 30 SNCO's and 70 rank and file.

THE NEED

20. Army Apprentices School. The AAS has been located at Balcombe on the Mornington Peninsula since 1948. Balcombe is approximately 5 kilometres south of Mornington and 60 kilometres south east of Melbourne.

21. The Balcombe military land holding of 70.5 hectares comprises three main portions, divided by public road reserves and by a creek/quarry reserve over which the Commonwealth Government has permissive occupancy.

22. The area surrounding the Army site is rural in nature, but recent development to the immediate north and south have increased residential pressures on the site.

23. As there are no other military establishments in the vicinity, economies cannot be achieved through the sharing of facilities or in administrative and logistic running costs.

24. The Committee appreciates the concern expressed at the public hearing by the representatives of the Shire of Mornington at the removal of the Army Apprentices School from the Mornington Shire. The Committee also acknowledges the excellent relationship that has existed between the Army Apprentices School and the local community. However, having considered all the evidence the Committee is satisfied that there are significant advantages in relocating the School at Bonegilla. The suggestion by the Mornington Shire that the existing buildings on the Balcombe site be progressively dismantled and new buildings erected was not considered to be feasible or economic.

25. Existing Facilities. The Army Apprentices School is housed in some of the worst living and working accommodation occupied by the Services. The existing barracks are primarily of World War II vintage and are of timber construction clad with galvanised iron or fibre sheet and lined internally with concrete or similar board. Also there is a high fire risk within individual buildings and throughout the area generally.

26. There are four buildings of a permanent nature on site being the officers' mess, the administrative building, the rank and file canteen and the gymnasium. However, the latter two, built in the 1950s, no longer meet requirements and would be expensive to modify.

27. Since 1948 large expenditure has been incurred to maintain the School at a standard barely suitable for habitation. Essential maintenance costs alone currently exceed \$0.4m annually.

28. Due to the steep and fragmented nature of the site it has not been practicable to provide the range of facilities necessary for the physical, recreational and sporting needs of the School. The main facilities comprise six ovals in poor to fair condition of which five are not easily accessible from the apprentice residential area.

29. Housing. The majority of the 119 Service dwellings at Balcombe and in the Mornington area are of very poor quality. 19 are temporary married quarters comprising converted huts, 24 are prefabricated dwellings constructed in the 1950s, and 70 are Commonwealth State Housing Agreement dwellings which are under scale and inadequate. Some 113 dwellings would, but for the proposed move, have either been replaced or be under consideration for disposal or exchange in the long term. The remaining 6 dwellings may be utilised by Servicemen posted to other units or exchanged for metropolitan housing.

30. Future of Balcombe. It is currently proposed to release the land and buildings at the Balcombe site to the Department of Administrative Services.

31. School of Military Survey. The School of Military Survey is located at Bonegilla on a portion of the site to be redeveloped. The Bonegilla property was formerly an Army base and then the Bonegilla Migrant Centre. It was returned to Army control in 1967.

32. Existing Facilities. The buildings were constructed in the 1940s and are similar in construction and condition to those at the AAS. Despite improvements which have been carried out over the years they are still of a low standard. They cannot provide the proper conditions for the specialised and expensive survey equipment in use. Recreational and living facilities are similarly of a very low standard. Maintenance costs exceed \$0.1m annually.

33. WRAAC School (Recruit Training). The WRAAC School has been at Georges Heights since the late 1950s. Except for the Officers Mess it is accommodated in World War II facilities similar in standard and condition to those existing at Balcombe and Bonegilla. It is proposed that the Recruit Training element of this School be located at Bonegilla where its activities will be in harmony with other training at the site and where operating economies can be achieved.

34. Location of the Army Apprentices School. A study to determine the best location for the AAS was carried out resulting in the selection of Bonegilla as the site, the prime reasons being:

- the availability of a sufficient area of land at Bonegilla suitably located from environmental, staff and family education, urban development and civilian infrastructure points of view;
- the training benefits that would derive from the association of the AAS with units of the type already in the Bonegilla/Bandiana area; and
- the capital and operating economies that would be achieved by collocation of the AAS with other Army units, particularly those of a training nature.

35. Bonegilla-Bandiana Property Development Plan. The Bandiana property lies astride the Murray-Valley Highway approximately 2 kilometres east of Wodonga. It is open, undulating land and accommodates a supply battalion, a base workshop, the Royal Australian Army Ordnance Corps Centre, the Royal Australian Electrical and Mechanical Engineers Training Centre, and several minor units. The Bonegilla site is about 8 kilometres further to the east along the Highway.

36. A Defence Study Group was established to determine the optimum and most economic configuration of units planned for location in the Bandiana-Bonegilla area. The recommendation was that Bandiana should house basically the logistic type units and that Bonegilla should be established essentially as a training area. The Bonegilla Stage 1 Development is the first phase of this plan.

37. Committee's Conclusion. The existing accommodation of the Army Apprentices School at Balcombe, the School of Military Survey at Bonegilla and the WRAAC School of Recruit Training at Georges Heights are of World War II vintage and need replacing. The proposed collocation of these units on a new site at Bonegilla will result in capital and operating economies and provide training benefits.

THE SITE

38. The Bonegilla site has a small frontage to Lake Hume on the east and the surrounding country is rural in nature. The site is subdivided into three parcels of land comprising 179, 25 and 7 hectares

respectively and provides adequate space for development and expansion. The only occupant of the site at present is the School of Military Survey.

39. The existing engineering services are generally sound and will, wherever possible, be incorporated into the new development.

40. Albury-Wodonga Development. The Albury-Wodonga growth area is situated to the north, west and south of this site and current plans show no residential development within 5 kilometres of the Bonegilla site. Defence plans for the area have been incorporated into, and are compatible with, the Albury-Wodonga Development Corporation plans.

41. Langwarrin. It had been suggested to the Committee that consideration should be given to locating the Army Apprentices School at Langwarrin Military Reserve on the Mornington Peninsula rather than at Bonegilla.

42. The Committee was informed by the Department of Defence that Langwarrin is a unique area in that approximately 45% of the plant species indigenous to the Mornington Peninsula can still be found in the Reserve (which has an area of 212 hectares). Some of the species are now rare in this region. In addition more than 50% of the mammal species known to still exist in the Westernport/Mornington Peninsula region have been identified in the Reserve.

43. As a consequence of its early military usage, and in particular its ecological and scientific significance, the Reserve was recorded by the National Trust of Victoria and is included in the Register of the National Estate.

44. Additionally, because of the limited military usage of the Reserve the Department of Defence is proceeding with disposal action prior to the Reserve reverting to the control of the Victorian Government. The Committee was further informed that apart from ecological reasons the use of Langwarrin can be excluded by cost factors particularly high operating costs and it does not have the advantages for training that exist in the Albury-Wodonga area.

45. For the reasons outlined above the Committee is satisfied that it is not practicable to develop the Langwarrin Military Reserve to provide facilities for the Army Apprentices School or any other unit.

46. Committee's Conclusion. The site selected is suitable.

THE PROPOSAL

47. Common User Facilities. The aim has been to rationalise those functions which effect a saving in construction or manpower or both. Facilities for common use are:

- the library;
- class rooms (those which are not purpose designed for specialised use);
- the canteen;
- messes;
- the medical centre;
- physical, recreational and military training facilities; and
- material resources centre.

48. Central Administrative Area. Office type accommodation will be provided to house the staff responsible for the administration and coordination of area facilities. Facilities for duty personnel are also included.

49. Rank and File, Apprentices and WRAAC Recruit Accommodation. Sleeping accommodation will be provided for 669 apprentices, 69 rank and file and 54 female recruits. Separate bedrooms of 9.9 m² in groups of eight around a toilet/ablution facility and common room are desirable for two thirds of the apprentices with the remainder grouped in fours.

50. A total of six company administrative areas are required in the living zone for each of the four apprentice companies, the rank and file staff and students and the WRAAC recruits.

51. A kitchen to provide for 818 personnel and a central ration store to provide for 933, including officers and sergeants, is required.

52. Dining areas are needed to seat apprentices and rank and file in two sittings and female recruits in one sitting.

53. A canteen to scale for 818 personnel will include a tavern and dry goods areas and three separate indoor recreation areas for apprentices, female recruits and rank and file.

54. Officers and Senior Non-Commissioned Officers' Messes. The officers' mess to scale for 32 officers will include an ante room and bar, a dining room to seat 24, a games room and the usual ancillary facilities. Living accommodation for 1 commanding officer, with self contained area of 39 m², 2 senior officers each with 24 m² and 18 Junior officers each with 14 m² is to be provided with toilet facilities shared between two in accordance with Services Scales and Standards of Accommodation.

55. The senior non-commissioned officers' (SNCO) mess will provide the same type of facilities as in the officers' mess but to scale for 83 SNCO. The dining room will seat 56. 37 bedrooms of 11 m² are required with toilet facilities shared between two in accordance with Services Scales and Standards of Accommodation.

56. A single kitchen to scale for 115 diners is to serve both messes and the nearby medical centre.

57. Food Services. Consultants with known food service expertise were engaged for advice in providing the most satisfactory and economic food service to meet Army requirements for Bonegilla, and their study encompassed the requirement for the whole of the Bonegilla/Bandiana area. There are six existing messes and kitchens at Bandiana (8km away) which were evaluated from the viewpoints of efficiency, and of continuing maintenance costs.

58. The consultants recommended the provision of a centralised food service as the best solution to meet the requirement for the new development at Bonegilla: and on a consideration of the savings in operating and

maintenance costs which would accrue from operating the six kitchens at Bandiana as components of a centralised system, they also recommended, as economically sound and efficient, the provision of an overall Bonegilla/Bandiana food service. These recommendations are included in the designs.

59. Centralisation is the basis of a modern economic food service, and involves the pre-preparation and storage of food at a central preparation kitchen, from which it is distributed to finishing kitchens for final preparation and serving. This achieves substantial savings in operating costs and overall equipment costs through better utilisation of labour and equipment. There is no transporting of ready to serve hot foods.

60. For this proposal the central preparation kitchen will be combined with the serving kitchen for rank and file personnel and apprentices at Bonegilla; and the Bonegilla Officers and SNCO's kitchen, and the Bandiana kitchens, will be finishing and serving kitchens.

61. Storage, receiving, purchasing and menu development will also be located with the central kitchen thereby achieving further operational cost savings.

62. The Committee noted that the proposed centralised food service was a new innovation being introduced into the Defence Force for the first time. The Committee sought an assurance that adequate research had taken place and that the system had been in operation elsewhere and had been found satisfactory. The Committee also sought details of the substantial savings that would result from the installation of the centralised food service. We were advised that the cost savings would result from improved utilisation of equipment and labour. Equipment costs would be reduced because of less duplication of expensive items and building costs would be reduced because the building area for a centralised facility with satellite kitchens is less than for each kitchen to be fully self contained. The Committee was also assured that there will be no loss of food quality in using a centralised food service.

63. Medical and Dental Centre. A combined medical and dental centre is required and will comprise:

- reception and administration area;

- dental facilities with 4 surgeries, a laboratory and an administrative office;
- medical facilities with a diagnostic area and a 26 bed ward area and associated service areas.

64. Sporting and Recreational Facilities. Sporting and recreational training facilities will comprise:

- 8 playing fields
- 5 tennis courts
- 5 volley ball courts
- 3 squash courts
- gymnasium with two minor halls and dressing pavillion.

Also included was a 50 metre 9 lane unheated swimming pool at an estimated cost of \$400,000. Evidence from the Mayor of Wodonga indicated that the local unheated pool in Wodonga was closed for 5 months of the year from May to September. Of the remaining 7 months of the year the use of the proposed unheated pool at the Army site at Bonegilla would be further restricted for a three month period between November and January owing to final examinations, graduation parades and the December-January vacation period.

65. The Committee believes that as the Army requires training and testing of military personnel in swimming and associated activities, water sports and recreation the construction of an unheated pool which would be used for approximately 4 months of the year would not be economically efficient.

66. The Committee further believes that because the Bonegilla Army complex will be largely a training unit with a substantial number of young trainees, that a covered heated pool should be provided with some space for spectator seating at an estimated additional cost of \$330,000. The pool would be used by both Bonegilla and Bandiana Army personnel for training, sporting and recreational purposes.

67. Committee's Recommendation. A 50 metre 9 lane, covered heated swimming pool, with some space for spectator seating, should be provided, at an estimated additional cost of \$330,000. This will ensure maximum utilisation for training and recreational purposes by the large number of Army personnel in the Bonegilla/Bandiana area.

68. Military Training Facilities. Military training facilities will comprise:

- administrative offices;
- 25 metre (small bore) range;
- external exercise area (constructed in conjunction with the sealed parade ground).

69. The Schools Complex. The Schools Complex comprises the practical and theory training facilities of the development. It is designed around a "spine" which will be the main pedestrian access and circulation space linking the various elements of the complex together.

70. The "spine" will be designed to provide a lively and interesting atmosphere along its length by its variety of pedestrian ways, covered and open spaces, courtyards and integrated landscaping.

71. The main components are:

- Army Apprentices School;
- Material Resources Centre,
- School of Military Survey.

72. The Complex has been designed for maximum shared usage of facilities. Materials resource facilities, classrooms and amenities will be shared by all users, and exclusive use areas will be provided only where necessary.

73. The design has been developed with a capability for expansion, so that future schools can be added when this becomes necessary. It is also designed for flexibility so that changes in standards and techniques brought by progress in education methods, can be accommodated by modifications and extensions.

74. Army Apprentices School. The Army Apprentices School provides military recruit training, general education, and practical and theory trade training for:

- Vehicle Trades;
- Metal Trades;

- Building Trades;
- Radio and Electrical Trades.

75. The trade training element of the school is operated and staffed by the Victorian Education Department and this arrangement will continue in the new development.

76. There has been close consultation with Victorian Education Department senior staff and planning officers in the development of the brief and the designs, and modern principles of technical education have been incorporated in the planning to meet the needs of Army apprentice training.

77. The Technical and Further Education Commission was also consulted, and the estimates are within their cost standards.

78. Trade instruction is based on a "self paced learning system" where students move between trade workshop and trade theory at their own pace. Instruction is by individual and group tuition including the use of visual training programs.

79. The designs are based on:

- instructional group sizes of 16 students;
- trade and theory instruction area sizes adopted by the Victorian Education Department;
- student : student-place ratio of 1:1.86 which includes for general education and "on the job" training.

80. Materials Resources Centre. The Material Resources Centre is the central instructional facility for the whole Schools Complex and incorporates:

- office of the Principal of the Army Apprentices School, with Vice-Principal's office and administrative support;
- general education administration;

- library;
- duplication centre;
- staff training and development;
- lecture theatre;
- computer facility accommodation;
- audio-visual facilities;
- model room;
- syndicate rooms.

81. School of Military Survey. The School of Military Survey contains facilities for instruction in military survey and the associated trades and skills.

82. WRAAC School (Recruit Training). The only facilities required especially for WRAAC recruits are administrative, one class room within their accommodation zone, and a bitumen sealed parade ground. The facilities of the Schools Complex will be available to them as necessary.

83. Housing. Ten on-base married quarters will be provided for those staff who should be readily accessible to the units.

84. Future Development. The construction of a chapel, assembly hall/theatre, and accommodation for military vehicles is planned for a later development. Deferment of the first two items was possible because of the availability of an existing theatre on site with some residual life.

CONSTRUCTION

85. Master Planning. A number of master planning alternatives were investigated to meet the following desirable planning criteria:

- preservation and incorporation of the attractive natural features of the site;

- optimum site utilisation to allow development potential for future requirements;
- emphasis on a predominantly pedestrian campus with vehicles restricted as much as possible to the perimeter of the development.

86. Design Considerations. Building designs and sitings will utilise land form features to gain pleasant outlooks and views, and will complement and blend into the landscape by the use of low rise construction, i.e. nothing over three storeys, and colours which harmonise with local natural colours.

87. The buildings fall generally into two groups, one being of domestic scale including sleeping accommodation, medical centre and officers/SNCO's messes, and the other of larger buildings including schools complex and rank and file mess/gymnasium. These buildings of differing scale, function and construction will be unified into the total development by the use of common materials such as brick, timber and metal roofing, and by the overall landscape theme.

88. The domestic scale buildings will be sited on the slopes of a natural valley with an artificial lake, and constructed of light coloured clay bricks, some timber elements, and bronze olive metal roof decking.

89. By this siting arrangement and choice of materials and colours, and by natural landscape design, an informal relaxing atmosphere will be created in the domestic zone, and will be carried into the surroundings and courtyards of the functional zone.

90. Designs have been developed with cost limitation in mind, and although general building industry costs have risen some 4% during the period between the preparation of the preliminary estimate in March 1978 and the limit-of-cost estimate, savings have been achieved which have resulted in a cost increase of less than 2%. This is the result of a careful review of requirements by the sponsor, and of design solutions by the Department of Construction and this process will continue during further development of the proposal.

91. Materials and Finishes. Materials and finishes have been selected as appropriate to the forms, structures and functions of the buildings, with costs, maintenance, cleaning, durability, structural suitability and local labour availability in mind.

92. Because of the large size of the project in relation to the labour availability in the local community and nearby towns, close attention will be given in design details, and in methods and material selections, to ensure that maximum use is made of local labour, and at the same time the need to import labour is kept to a minimum. However, the domestic scale of many of the buildings indicates that brick will be the most satisfactory construction material for a large proportion of the development.

93. External Finishes. Sleeping quarters will be in brick domestic type construction with timber elements, and the brick and timber finish will be carried through to the medical and dental centre, officers'/ SNCO's mess and company administration buildings.

94. The major buildings such as the schools complex, mess/recreation centre, and physical fitness centre, will have the brick and timber theme carried through from the more domestic scale buildings, by the use of elements and panels of these materials, but a major cladding material for these buildings will be compressed asbestos cement panels.

95. Brick construction will be required for a major part of the development, which presents difficulties because of the limited availability of bricklayers in the area. Consequently, consideration has been given to the use of alternative less costly forms of construction wherever practicable, and metal cladding, pre-cast concrete and asbestos cement were investigated.

96. In considering costs, appearance, durability, maintenance, and on site labour requirements, the Department of Construction selected the compressed asbestos cement panels, coloured to harmonise with the landscape, as the most satisfactory solution. This material has been used in many Canberra schools and has been successful from the architectural, economy

and labour limitation viewpoints. The Committee was assured that union requirements for safeguards in handling asbestos cement were met in Canberra and will be met on this project.

97. Internal Finishes. Structural walling and some partition walls will be brick or block work flush jointed and painted, and other partition walls will be stud frame and plaster. Face brickwork will be used for some walls in foyers and other areas. The medical and dental centre will have painted hard plaster wall finishes throughout.

98. Floor coverings will be carpet to bedrooms, common rooms, hospital wards and corridors, ante-rooms, T.V. rooms, library, conference room, offices, and class rooms which are not direct components of practical workshop training. Other areas will have hard floor coverings appropriate to functions.

99. Engineering Services. All buildings will have engineering services such as water, light and power as necessary.

100. Air conditioning will be provided for the medical and dental centre, and for areas in other buildings where there is a specific functional requirement. Evaporative cooling will be provided for the schools complex, gymnasium, central administration, messes and kitchens. The standard of cooling will achieve acceptable summer indoor conditions at less cost than for refrigerated air conditioning.

101. Heating will be by a ducted warm air ventilation system to areas having high density usage, using the same ducts as for evaporative cooling; and by wall mounted thermostatically controlled oil filled electric heaters elsewhere. Bedrooms and common rooms will have this latter form of heating. Exhaust ventilation will be provided for change rooms, toilets, special purpose areas, and to kitchens in addition to evaporative cooling.

102. A fuel study was carried out to ascertain the most suitable fuel option based on economic and practical considerations.

103. The aim of the fuel study was to select a fuel for space heating, cooking, laundry and clothes drying.

104. Six alternatives were examined:

- natural gas;
- continuous electricity;
- storage (off peak) electricity;
- liquid petroleum gas;
- light fuel oil;
- composite system of electricity and light fuel oil.

105. Amortised costs show that natural gas, continuous electricity and storage electricity would incur the same annual charges taking into account initial capital costs, maintenance costs and fuel tariffs. However the use of natural gas would require extension of the gas main from Wodonga at a cost of about \$0.750M, and therefore would involve by far the highest initial cost in establishing a fuel supply on site. It would also involve the highest cost for heating equipment.

106. The Committee was advised that the Gas and Fuel Corporation of Victoria is formulating an offer based on the costs of the gas main extension being funded from other than Commonwealth sources, and if such an offer is made the Department of Construction will re-examine the fuel selection question.

107. There is an existing 22,000 high voltage supply to the site from the State grid by an aerial spur line and as storage electricity is not suitable to the project, it is intended to use continuous electricity for all purposes, except for some cooking.

108. It is proposed to include storage and supply facilities for LP gas to service certain cooking equipment, and this would be available as an alternative fuel source in the event of an electricity supply problem.

109. The use of solar energy was examined for supplementary hot water heating, but was not considered to be economic at present.

110. Electrical Engineering Services. The high voltage supply to the site is at 22,000 volts fed from the State grid by an aerial spur line. There is an existing reticulation system (H.V. and L.V.) on the site, but only about 20% of this will be usable for the proposed development. The remainder will not suit the layout of buildings and will be demolished. The proposed reticulation system will be under ground in the building area and aerial elsewhere. It will include three substations. Emergency A.C. supply will be provided only to the casualty area of the medical and dental centre, and the computer centre.

111. Streetlighting and footpath lighting will be to the appropriate Australian standards, and external lighting to buildings and carparks will be to a standard adequate for pedestrian movement at night. Illumination will be provided to the athletics track, two Australian rules ovals, one rugby oval, and two tennis courts.

112. Thermal fire detection will be provided where necessary.

113. Civil Engineering Services. The Country Roads Board of Victoria has stated that it will be seeking a Commonwealth contribution to the cost of reconstruction of the Bonegilla Road/Murray Valley Highway intersection, to remove a safety hazard which will be aggravated by the late afternoon peak traffic leaving the Bonegilla development. This will be examined in the light of traffic intensities and topography when a survey is complete. The Department of Defence has allowed \$200,000 in the estimate should a contribution be found to be justified. A right turn separated lane will be provided at the Bonegilla Road entrance.

114. The main entrance road from Bonegilla Road will be used in the new development, with some repairs and resurfacing.

115. New roads will be bitumen sealed with gravel edges and grassed open drains, to limit cost and to provide an appropriate informal appearance

in keeping with the landscape planning. Concrete kerbing and edging will be kept to a minimum.

116. Footpaths will be mainly concrete, with some gravel paths through landscaped areas for occasional use. Brick paving will be used in certain courtyards and entrances.

117. Carparks will be sized and located to suit requirements, and will be carefully designed and landscaped to prevent them being too visually dominant. Short term frequent use carparks will be bitumen sealed and long term car parks will be gravel.

118. The existing water supply system comprises a pumping station on the Murray River below the Hume Weir, pumping to tanks on the site from which water is reticulated throughout the area. There is an existing chlorination system which will be incorporated in the new reticulation. A new fluoridation system will be provided. Existing reticulation will be used in the new development where possible. New reticulation will be a combined domestic and fire service with a fire booster pump. A separate system connected to the existing tanks will be provided for irrigation of the sports area.

119. There is an existing sewerage system including a treatment plant. The plant is adequate for the new development and requires only minor work to bring it to good condition. The existing reticulation is mainly in good condition and will be re-used where possible.

120. The site is generally well drained and disposal from the site is via natural water courses. There is an existing underground drainage system in good condition which will be used in the new development wherever possible.

121. Landscaping. Landscape consultants who have had considerable experience in the area and were recommended by the Albury/Wodonga Development Corporation, were retained to assist in the development of a landscape master plan for the site, and for the landscape design closely associated with the buildings.

122. The landscape plan retains a maximum of existing vegetation, which will be supplemented by planting extending into the new development to enhance natural features and blend with the surrounding rural landscape.

123. Open spaces and views created by the topography of the site, and existing trees which are worth retaining, will be incorporated into the new development.

124. Courtyards and streetscapes created by the building development will be landscaped to provide areas for outdoor relaxation and will provide attractive foregrounds to the internal areas particularly bedrooms and common rooms.

125. Two artificial lakes of informal design will be important landscape elements, and will have particular appeal during summer.

126. The landscaping will be used to blend car parks and roads into the environment and to prevent them from becoming unsightly and dominant features in the development.

127. Environmental Impact. The Department of Environment, Housing and Community Development has examined the proposal and advised that an Environmental Impact Statement was not required.

128. Committee's Conclusion. The Committee recommends the construction of the work in this reference.

PROJECT MANAGEMENT

129. In evidence to the Committee, Civil and Civic Pty Ltd outlined the advantages of project management which it saw as an alternative fundamental approach to implementing the design and construction of major public works. Under the Civil and Civic proposal, a project manager would assume full responsibility for all aspects of the management of planning, design and construction of a project. It was claimed that this system contrasts with the traditional method of constructing Commonwealth Government works with the Department of Construction acting as the agent of the client Department.

130. It was claimed by Civil and Civic that savings in both money and time could be achieved by the project manager method. Evidence was also given that at State and local government levels a high degree of acceptance of the project management approach is evident for a wide range of facilities, where time, quality and cost targets have to be met.

131. On the evidence put before it, the Committee is unable to recommend that for this reference there be any departure from the normal procedures of the Department of Construction. However, the Committee believes that the proposal put forward by Civil and Civic Pty Ltd should be further studied.

132. Committee's Conclusion. The Department of Construction should undertake a thorough examination of the proposal regarding project management put to the Committee by Civil and Civic Pty Ltd.

ESTIMATE OF COST

133. The estimated cost of the work when referred to the Committee was \$29.5 million at July 1978 prices, made up as follows:

	\$
Schools Complex	8,450,000
Sleeping Accommodation	9,200,000
Messoes, kitchens, recreation centre	3,000,000
Administration and stores	2,900,000
Indoor and outdoor recreation	2,560,000
External services	3,400,000
	29,500,000

PROGRAM

134. Construction has been planned to be completed in stages to meet Defence requirements, based on approval to proceed being given by December 1978.

135. The overall program is:

- first site works and construction of rank and file accommodation to commence October 1979;

- schools complex to commence March 1980 with completion of School of Military Survey April 1981;
- final completion November 1982.

RECOMMENDATIONS AND CONCLUSIONS

136. The summary of recommendations and conclusions of the Committee is set out below. Alongside each is shown the paragraph in the report to which it refers.

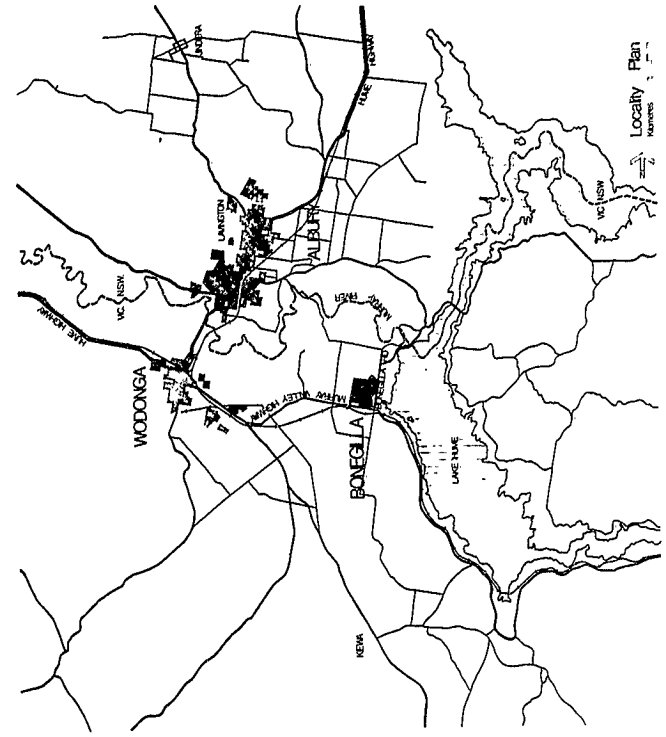
	<u>Paragraph</u>
1. THE EXISTING ACCOMMODATION OF THE ARMY APPRENTICES SCHOOL AT BALCOMBE, THE SCHOOL OF MILITARY SURVEY AT BONEGILLA AND THE WRAAC SCHOOL OF RECRUIT TRAINING AT GEORGES HEIGHTS ARE OF WORLD WAR II VINTAGE AND NEED REPLACING.	37
2. THE PROPOSED COLLOCATION OF THESE UNITS ON A NEW SITE AT BONEGILLA WILL RESULT IN CAPITAL AND OPERATING ECONOMIES AND PROVIDE TRAINING BENEFITS.	37
3. THE SITE SELECTED IS SUITABLE.	46
4. A 50 METRE 9 LANE, COVERED HEATED SWIMMING POOL, WITH SOME SPACE FOR SPECTATOR SEATING, SHOULD BE PROVIDED, AT AN ESTIMATED ADDITIONAL COST OF \$330,000. THIS WILL ENSURE MAXIMUM UTILISATION FOR TRAINING AND RECREATIONAL PURPOSES BY THE LARGE NUMBER OF ARMY PERSONNEL IN THE BONEGILLA BANDIANA AREA.	67
5. THE COMMITTEE RECOMMENDS THE CONSTRUCTION OF THE WORK IN THIS REFERENCE.	128

	<u>Paragraph</u>	
6.	THE DEPARTMENT OF CONSTRUCTION SHOULD UNDERTAKE A THOROUGH EXAMINATION OF THE PROPOSAL REGARDING PROJECT MANAGEMENT PUT TO THE COMMITTEE BY CIVIL AND CIVIC PTY LTD.	132
7.	THE ESTIMATED COST OF THE WORK WHEN REFERRED TO THE COMMITTEE WAS \$29.5 MILLION.	133

(M.H. Bungey)
Chairman

Parliamentary Standing Committee on Public Works,
Parliament House,
CANNBERRA. A.C.T.

16 November 1978.



A.

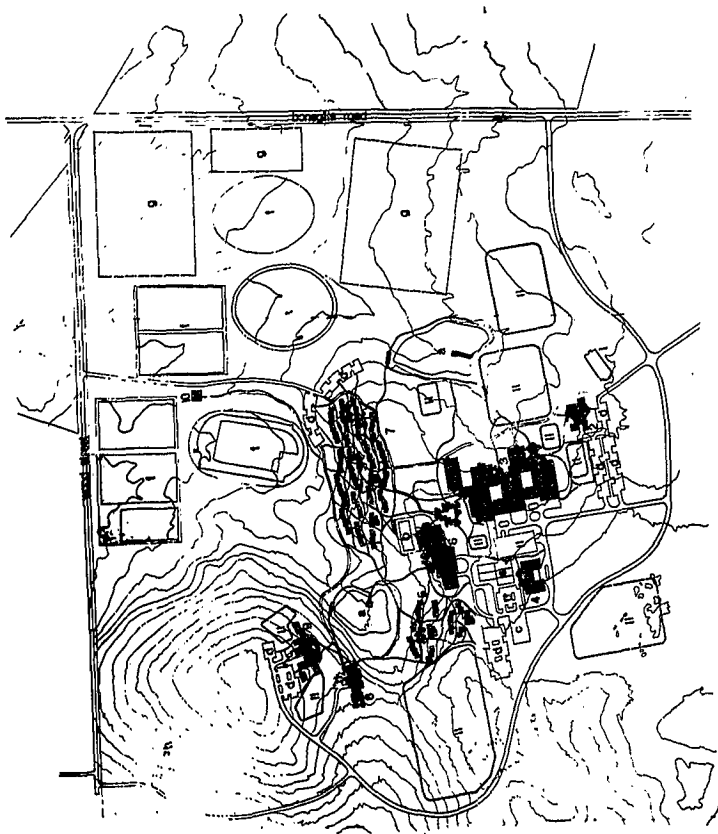
LEGEND

- a Lake
 - b Road
 - c Parade Ground
 - d Camp
 - e Tennis Courts
 - f Playing Fields
 - g Future Playing Fields
 - h 25 Meter Range
- 1 Existing Assembly Hall
 - 2 Central Administration
 - 3 Army Apprentices School & Survey School
 - 4 O. Store
 - 5 Other Parts Accommodation
 - 6 CRs & Apprentices Messes
 - 7 Recreation & Physical Training
 - 8 Apprentices Accommodation
 - 9 Medical Centre
 - 10 Officer & SNCOs Messes
 - 11 Sports Pavilion
 - 12 Future Bowling Zone

Site Plan



Metres 0 10 20 30



P.W.C. REPORT—development of Army site Stage 1, Bonegilla, Victoria.

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