



Parliamentary Standing Committee on Public Works

REPORT

relating to the

CONSTRUCTION OF WORKING ACCOMMODATION AND WAREHOUSING FOR 51ST SUPPLY BATTALION, GUILDFORD, W.A.

(Seventh Report of 1986)

THE PARLIAMENT OF THE COMMONWEALTH OF AUSTRALIA
1986

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PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS

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AND WAREHOUSING FOR
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Australian Government Publishing Service
Canberra 1986

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(Twenty-Eighth Committee)

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Keith Webb Wright, M.P. (1)
John Saunderson, M.P. (2)

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(1) Resigned 13 February 1986
(2) Appointed 18 February 1986

EXTRACT FROM THE
VOTES AND PROCEEDINGS OF THE HOUSE OF REPRESENTATIVES
NO. 100 DATED THURSDAY, 22 MAY 1986

6 PUBLIC WORKS COMMITTEE - REFERENCE OF WORK - WORKING ACCOMMODATION AND WAREHOUSING FOR 51ST SUPPLY BATTALION, GUILDFORD, W.A.: Mr West (Minister for Housing and 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 consideration and report: Construction of working accommodation and warehousing for 51st Supply Battalion, Guildford, W.A.

Mr West presented plans in connection with the proposed work.

Debate ensued.

Question - put and passed.

C O N T E N T S

	<u>Paragraph</u>
THE REFERENCE	1
THE COMMITTEE'S INVESTIGATION	3
BACKGROUND	
51st Supply Battalion	8
Location of Elements	15
Karrakatta/Irwin Barracks	16
Shenton Park	18
Midland	19
Guildford	20
Northam	21
Garden Island	22
THE NEED	23
Deficiencies at the Midland Property	24
Committee's Conclusion	28
THE PROPOSAL	29
Extent of the Proposal	32
Site	33
Headquarters Building	36
Amenities Building	38
Noise Attenuation	39
Warehouse	40
Technical Support Building	48
Other Buildings	49
Gatepost	51
Access Road	52
Security	55
Associated Rationalisation	57
Benefits to Result from the Proposed Work	59
Committee's Recommendation	60
Committee's Conclusion	61

ENVIRONMENTAL CONSIDERATIONS	62
CONSULTATIONS	63
USE OF CONSULTANTS	65
COST AND TIMETABLE	66
Committee's Recommendation	69
RECOMMENDATIONS AND CONCLUSIONS	70

APPENDICES

Appendix A	
List of Witnesses	A-1
Appendix B	
Construction Details	B-1
Appendix C	
Illustrations	
Location	C-1
Guildford Site	C-2
Floor Plan of Proposed Building	C-3
Floor Plan of Amenities Building	C-4
Floor Plan of Warehouse Building	C-5
Plans and Elevations	C-6
Weapons Store	C-7
Hazardous Goods and Refrigerator	
Storage Buildings	C-8

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS

CONSTRUCTION OF WORKING ACCOMMODATION AND WAREHOUSING
FOR 51ST SUPPLY BATTALION, GUILDFORD, W.A.

R E P O R T

By resolution on 22 May 1986 the House of Representatives referred to the Parliamentary Standing Committee on Public Works for consideration and report the proposed construction of working accommodation and warehousing for 51st Supply Battalion, Guildford, W.A.

The Committee is pleased to report as follows:

THE REFERENCE

1. The work proposed under this reference comprises the following elements:

- a bulk storage warehouse;
- associated stores buildings and workshops;
- a single storey Headquarters facility;
- an amenities building;
- a control post;
- associated engineering services and site works.

2. The estimated cost of the proposed work when referred to the Committee was \$8.2 million at April 1986 prices.

THE COMMITTEE'S INVESTIGATION

3. The Committee received written submissions and drawings from the Department of Defence (Defence) and the Department of Housing and Construction (DHC) and took evidence from their representatives at a public hearing held at Guildford on 24 July 1986. The Committee gratefully acknowledges the assistance of the Swan Shire Council for making available its Council Chamber for the public hearing.

4. Written submissions were also received from a number of organisations with an interest in the proposal.

5. A list of witnesses who appeared before the Committee and the organisations they represented is at Appendix A.

6. Prior to the public hearing the Committee inspected facilities occupied by 51st Supply Battalion at Irwin Barracks, Karrakatta; Shenton Park, Midland, and the site for the proposed work at Guildford.

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

BACKGROUND

8. 51st Supply Battalion In broad terms the function of 51st Supply Battalion is to provide supply and support and services to Army units located in Western Australia, to the Army as a whole and provide single service supply support to the Royal Australian Navy and the Royal Australian Air Force.

9. The tasks carried out by the Battalion include:

(a) receipt, storage, maintenance and issue of stocks of principal items, general stores, clothing, camp and barrack stores, accommodation stores, printing and stationery requirements, office machines, repair parts and accessories, technical stores, foodstuffs, petrol, oils and lubricants (POL) and ammunition;

(b) receipt, storage, maintenance and issue of all medical and dental stores to the Royal Australian Navy and Royal Australian Air Force units in Western Australia and to Navy ships in or operating out of the port of Fremantle or HMAS Stirling;

(c) operation of an explosive ordnance disposal control centre and associated tasks; and

(d) operation of the central clothing store for the Perth area.

10. Army units served by 51st Supply Battalion in Western Australia include the Special Air Service Regiment, 22 Construction Squadron, a field surveying squadron, the Perth Transport Unit and a wide range of Army Reserve Units including 16 Battalion, Royal Western Australian Regiment, two independent rifle companies, a field battery, a field engineering squadron and the Pilbara Regiment.

11. Defence advised that the numbers of Regular Army and Army Reserve personnel serving in Western Australia as at 24 July 1986 were:

Regular Army 1288 - all ranks
Army Reserve 2386 - all ranks

12. 51st Supply Battalion has a strength of 188 personnel comprising regular army, reservists and civilians. The ratio between uniformed and civilian personnel is about 50:50. The rationale for the relatively high preponderance of civilian personnel in what is essentially an Army unit was questioned by the Committee. Defence advised that the Army has for many years employed civilian staff in those areas which are 'Static' and where functions can be carried out by civilians without any loss to military efficiency. This arrangement makes available more uniformed personnel for the field force component of the Army.

13. 51st Supply Battalion was created in 1973 as a result of the rationalisation of the Army Supply System. This rationalisation combined the stores elements of the Royal Australian Engineers, the disbanded Royal Australian Army Service Corps and the Royal Australian Army Ordnance Corps.

14. The Battalion monitors the usage of materiel and replenishment stocks are procured from other Army Supply Depots in eastern States or from local industry in Western Australia. Warlike stores are obtained from central supply.

15. Location of Elements Elements of the Battalion are dispersed in six separate locations in and around Perth. These locations are:

- Karrakatta;
- Shenton Park;
- Guildford;
- Midland;
- Northam;
- Garden Island.

16. Karrakatta/Irwin Barracks Karrakatta is located 10 kilometres south-west of the Perth Central Business District. The complex accommodates Regular Army and Army Reserve Units, including the following elements of 51st Supply Battalion:

- Headquarters, quartermasters store, transport section, explosives ordnance disposal element, supply operations and planning sections.
- Foodstuffs and POL, housed in purpose-designed structures completed in 1962; it provides all Army units with fresh and tinned food and combat rations. The POL element operates a kerbside fuelling depot and holds bulk stocks.
- Engineer and technical Stores loan pools This element is responsible for the loan and issue to units which includes radio sets, bridging, refrigeration, vehicles.
- Medical and Dental This function is carried out from a purpose-designed store built in 1961. It provides pharmaceutical services to RAN, RAAF and Army units. The pharmacy also provides individual prescription requirements over the counter.

17. In 1985/86 the Karrakatta element of 51st Supply Battalion handled 602 tonnes of foodstuffs and 29 tonnes of medical and dental stores.

18. Shenton Park This element is located three kilometres east of Karrakatta and operates as clothing stores for the Perth metropolitan area. The site occupied by the stores building is shared with an Army Reserve Unit. Both buildings are corrugated iron clad temporary structures. Defence advised that the site is more suited for housing development.

19. Midland The majority of general stores are held in warehouses on this 4.471 hectare property which is 39 kilometres by road from Karrakatta. The control office and local purchase sections are also located in a section of a converted warehouse. The majority of stores handled by the Battalion and the largest annual throughput of turnover is concentrated at the Midland site. In 1985/86 the warehouses issued 515 tonnes of general stores.

20. Guildford This 66 hectare site, 22 kilometres from Karrakatta was established as an ammunition depot prior to the First World War and remained in use as such until 1959. It was converted in 1961 as a vehicle storage area and can hold up to 2,000 vehicles. Elements of 51st Supply Battalion located there are responsible for the receipt, issue and maintenance of 500 replenishment and loan pool vehicles. Magazines formerly used to store munitions remain in use as vehicle equipment and storage facilities.

21. Northam This element of 51st Supply Battalion, located 106 kilometres from Karrakatta, is housed in a brick storehouse built in 1970 which provides storage space for materiel required by Units to establish base areas during field and camp training. This includes items such as tents, kitchenware, tables and personal equipment. Defence advised that the building provides adequate space for current holdings and limited expansion. In 1985/86 the depot issued 936 tonnes of stores.

22. Garden Island Located 70 kilometres south from Karrakatta, this element is responsible for the maintenance and storage of Army supplied ammunition requirements for training purposes in Western Australia.

THE NEED

23. Defence advised there is a need to co-locate the Headquarters elements of the Battalion with the major stores, control office and purchase functions. These functional areas are presently dispersed between Karrakatta and Midland. Co-location would generally achieve greater efficiency and fewer delays associated with the dispersal of the key elements of the Battalion.

24. Deficiencies at the Midland Property The warehouses at Midland were constructed in 1921. A blanket disinfection plant was added in 1937. It is still there, although not used. The buildings remain the general stores and warehousing facilities of the unit to this day. The site at Midland is valued at \$550,000 is long and narrow, presenting access problems to large trucks. It is located adjacent to stock sales yards. Although office areas have been improved as a consequence of complaints from staff about offensive odours from the saleyards, the nature of the stores buildings and the movement of stores are unsatisfactory. Furthermore, the Midland site is 39 kilometres by road from Battalion Headquarters at Karrakatta.

25. The majority of the four warehouses have wooden floors and close columns which inhibits the effective use of modern materiel handling equipment and places limitations on the size and weight of items and the height of storage shelving. These deficiencies have caused inefficiencies in manpower utilisation and storage space.

26. The age and condition of the buildings are a constant drain on funds for repairs and maintenance. The Committee was advised that DHC had estimated in 1982 that it would cost about \$400,000 to upgrade the four main warehouses and a further \$100,000 per annum would be required to maintain them for ten years.

27. For these reasons - the location of the warehouses adjacent to saleyards, difficulties in adapting the site or modifying the buildings to cater for the introduction of modern materials handling equipment and the ages and condition of the buildings, it would be prudent for economic and operational reasons to relocate the warehouse complex to another site. At the same time, for reasons of improved control and co-ordination it would be prudent to co-locate the main warehouse complex with Headquarters elements of the Battalion. Relocation of the latter from Karrakatta would provide space at Karrakatta for other elements of the Battalion, such as the clothing store.

28. Committee's Conclusion There would be advantages in terms of operational efficiency and control if the Headquarters elements of 51st Supply Battalion were to be located with the major warehouse complex and the control and purchase offices. Existing buildings at Midland are old and inadequate and the site is unsuited for contemporary warehousing activities.

THE PROPOSAL

29. The proposal comprises the construction of a modern purpose-designed warehouse and associated working accommodation including a new Headquarters building at the Guildford site. The Midland site will be disposed of and the Headquarters elements of the Battalion would be relocated at Guildford.

30. The proposal comprises the following buildings:

- Headquarters;
- Amenities;
- Warehouse;
- Gatepost;
- Technical support;
- Weapons store;
- Undercover refrigerator store;
- Hazardous goods store.

(8)

31. The following paragraphs describe the extent of the proposed work, the site, the buildings involved and a number of matters relating to siting and traffic. Construction details are in Appendix B.

32. Extent of the Proposal Defence submitted that the proposed work is aimed at correcting the more pressing deficiencies in existing facilities and aims at concentrating command, control and major warehousing functions at the Guildford site. The proposed work will not correct all facilities deficiencies of 51st Supply Battalion, but it will meet the more urgent needs. Defence stated the proposed work would provide the basis for the further development of Army supply facilities at Guildford.

33. Site The site at Guildford is 66 hectares in area and is considered large enough for a modern logistics complex and for expansion. The location of the site is shown in Illustration C-1. Illustration C-2 is a map of the Guildford site.

34. Both standard and narrow gauge railway lines are within 600 metres of the property. Defence advised that it would prefer to retain ownership of the easement for a spur line onto the property as a contingency against the possibility of significantly increased activity. The option of direct rail access to the site should be retained to enable the Battalion to quickly integrate its transport requirements into the State rail system.

35. Defence viewed with concern the possible use of the railway easement as parkland or open area associated with a proposed private housing development on land adjacent to the site. Any such development proposal must take full account of the fact that the easement does exist and should the need arise Defence would wish without encumbrance to construct a siding and spur line onto the Guildford site. The Committee believes Commonwealth, State

(9)

and Local Government Departments should hold urgent discussions aimed at ensuring the integrity of the spur line contingency is not compromised by adjacent land use development planning.

36. Headquarters Building This single level building will be located on the central axis of the ultimate site development and will provide office space for the following functions:

- Headquarters - relocated from Karrakatta;
- Quartermaster - relocated from Karrakatta;
- Records - relocated from Midland;
- Control office - relocated from Midland;
- Computers - relocated from Midland;
- Carports and garages.

37. Defence advised consideration is being given to replacing the Computer System in use at the control office at Midland. The areas to be provided for computer activities in the new Headquarters building will be adequate for any new computer system to be provided in the future. Illustration C-3 is a floor plan of the proposed building.

38. Amenities Building This will be a single level building to provide lunch rooms, change and toilet facilities. The lunch rooms will be provided with meal servers and could be used for conferences, functions and training classes. Illustration C-4 is a floor plan of the amenities building.

39. Noise Attenuation The Guildford site is almost directly in line with the main runway at Perth Airport. DHC advised that the locations of the amenities and Headquarters buildings are within Australian Noise Exposure Forecast contours acceptable for the type of development proposed. Even so, DHC advised that additional noise attenuation measures will be provided in the design of the Headquarters and Amenities buildings. Both buildings will be air conditioned which will require them to be

sealed. The difficulty of reducing aircraft noise levels to acceptable levels is consequently much easier. Two additional measures will also be implemented; about 30 per cent of the Headquarters building will be provided with an additional layer of plasterboard and the thickness of window glass will be increased from 6 millimetres to 8 millimetres. The Committee questioned the additional cost of providing additional noise attenuation measures. DHC advised the measures outlined above would cost between \$15,000-\$20,000 for the Headquarters building.

40. Warehouse This single level building will be the largest in the complex with a gross floor area of 11,700 square metres, or 115 metres long and 83 metres wide. Functional areas within the building include:

- central receipts;
- central issues;
- bin storage;
- bulk storage;
- process area;
- training area.

Illustration C-5 is a floor plan of the warehouse building.

41. Defence advised that the main storage area has been designed as a low rise (5 pallets, 6.8 metres high) and wide aisle facility employing manually operated materiel handling equipment. This design was chosen for maximum operational efficiency.

42. The Committee questioned a number of aspects relating to fire protection measures to be provided and the functionality of the building in relation to access to and from loading/unloading areas by large trucks.

43. DHC advised that the warehouse will be protected by an automatic fire sprinkler system, suspended from structural roof members. Commonwealth fire safety requirements stipulate an access space between pallet racks and the wall structures in the bulk store. The Committee was assured that this space will be provided to the required dimension when the detailed rack layout is determined during design development.

44. A fire wall, which will extend from the floor to the roof, will divide the building longitudinally into two sections. It will operate on the principle that a fire on one side could be localised. The fire wall will have a two hour fire rating.

45. On the question of ease of access by large trucks the Committee was advised that internal and external loading and unloading can take place. The Committee was assured by Defence that the level of throughput in the context of the proposed design will not cause any problems as far as the delivery of goods is concerned.

46. The size of the truck compound outside the warehouse will be sufficiently large to enable semi-trailers to completely turn and return outwards in a forward direction without reversing.

47. The Committee also questioned the capacity of expanding the floor area of the warehouse should the need arise. DHC advised that a number of features such as modular offices located along outside walls were designed to provide flexibility for expansion. It is possible to increase the size of the warehouse by 50 per cent.

48. Technical Support Building This building will be located adjacent to the warehouse and will contain the following functional areas:

- service bay;
- carpenters stores and carpenters shop;
- telecommunications and instrument work area;
- outboard motor work area;
- paint shop, spray booth and painters work area; and
- tea room, toilets.

Plans and elevations of the building are depicted in Illustration C-6.

49. Other Buildings The weapons store, hazardous goods and refrigerator storage will be located adjacent to both the technical support building and the warehouse.

50. Illustration C-7 depicts the weapons store. The hazardous goods and refrigerator storage buildings are depicted in Illustration C-8.

51. Gatepost This building will be located at the entrance to the secure area and will be occupied by a civilian guard responsible for controlling access to the warehouse and ancillary buildings. The guard will use the gatepost as a base from which the security perimeter will be patrolled at night.

52. Access Road The location of the various buildings proposed in this reference and the proposed routing of the access road is shown in Plan C-2, in Appendix C.

53. The Committee questioned the desirability of routing the internal road to the warehouse past the administration and amenities buildings. Defence advised that the internal road system linking the various buildings was derived from the zone

plan which identifies possible future uses for the development of the Guildford site. A number of constraints were identified which caused the alignment of the internal road system now proposed. These constraints and long term planning objectives include:

- extension of the proposed complex;
- rail spur line;
- location of a freight terminal; and
- retention of the existing vehicle park.

For these reasons the internal road, which is partially routed along the South-western boundary, attempts to provide flexibility for additional uses of the site in the longer term.

54. DHC advised that studies had indicated that about 1,000 vehicles per day would use the access road. The access road to the internal road system will in future require integration with the State Redcliffe-Bushmead controlled access road. This proposed road will cut the existing access road. DHC advised that negotiations with State and Local Government authorities have identified an alternative service road route which will serve the Guildford site and areas to the east and north-east of the site.

55. Security The warehouse complex will be surrounded with a security fence. The gatepost will control access to the complex. The weapons store will be provided with additional security protection including further fencing and intruder alarms.

56. The gatepost will be staffed continuously. The Civilian watchman will be responsible for patrolling the security perimeter.

57. Associated Rationalisation Relocation of the Headquarters elements of the Battalion from Karrakatta to Guildford will permit some rationalisation in the use of space and facilities vacated at Karrakatta.

58. The most significant rationalisation involves relocating the clothing store from Shenton Park into purpose-designed accommodation at Karrakatta. Space occupied by the quartermaster store will revert to its purpose-designed use as a domestic garage for the Perth Transport Unit.

59. Benefits to Result from the Proposed Work Defence submitted that the proposed work will permit the rationalisation of administration, receipts, despatch and storage with consequent:

- more economic operations due to co-location;
- more efficient liaison between supply operations and control office which are currently separated;
- greater flexibility and workforce utilisation;
- capacity for expansion; and
- improved working conditions.

60. Committee's Recommendation Commonwealth, State and Local Government authorities should hold urgent discussions aimed at ensuring that the preservation of the railway spur line easement is not compromised in the light of adjacent land use development planning.

61. Committee's Conclusion The extent of the proposed work can be justified on the grounds of the nature of the Midland facility which needs to be replaced and the advantages identified in co-locating Headquarters, administration and stores functions in the one complex. The Guildford site is suitable for the type of development proposed and provides sufficient space for expansion.

ENVIRONMENTAL CONSIDERATIONS

62. Defence advised that the proposal has been assessed in accordance with the Administrative Procedures of the Environment Protection (Impact of Proposals) Act 1974 and its impact was determined to be minimal.

CONSULTATIONS

63. DHC advised that consultations with State and Local Government had taken place and will continue throughout the tender documentation and construction phase.

64. Relevant industrial organisations at both Local and State level were briefed on the project. DHC advised that these organisations were given the opportunity to comment on and participate in the design brief and floor plan development phases. Their comments have been incorporated in the design. The Committee received letters from the Western Australian Branch of the Administrative and Clerical Officer's Association (Australian Government Employment) and the Western Australian Branch of the Australian Public Service Association. Both organisations strongly support the project.

USE OF CONSULTANTS

65. The Committee questioned DHC on the extent to which private consultants had been and will be used in the development of the project. DHC advised that preliminary development work had been carried out by private consultants. It is intended to continue the design process using consultants.

COST AND TIMETABLE

66. The limit of cost estimate for the project is \$8.2 million at April 1986 prices. DHC advised that subject to necessary approvals - and if Parliamentary approval is given in September 1986, tenders would be called about March 1987, contracts awarded and construction commencing about June 1987 with about 12 months required for construction.

67. The Committee questioned DHC on the buoyancy of the construction industry in Perth and if they were confident that the cost of the proposed work would not exceed the limit of cost estimate of \$8.2 million at April 1986 prices. In regard to the cost, DHC expressed confidence that it would not be exceeded.

68. DHC advised that the construction industry in Perth had been through a very active period, reflected in the amount of competition and the prices received in their general tendering process. In the last three to four months the extremely buoyant situation has passed and the level of competition has increased dramatically and tender prices are very competitive.

69. Committee's Recommendation The Committee recommends the construction of the work in this reference.

RECOMMENDATIONS AND CONCLUSIONS

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

	Paragraph
1. THERE WOULD BE ADVANTAGES IN TERMS OF OPERATIONAL EFFICIENCY AND CONTROL IF THE HEADQUARTERS ELEMENTS OF 51ST SUPPLY BATTALION WERE TO BE LOCATED WITH THE MAJOR WAREHOUSE COMPLEX AND THE CONTROL AND PURCHASE OFFICES.	28
2. EXISTING BUILDINGS AT MIDLAND ARE OLD AND INADEQUATE AND THE SITE IS UNSUITED FOR CONTEMPORARY WAREHOUSING ACTIVITIES.	28
4. COMMONWEALTH, STATE AND LOCAL GOVERNMENT AUTHORITIES SHOULD HOLD URGENT DISCUSSIONS AIMED AT ENSURING THAT THE PRESERVATION OF THE RAILWAY SPUR LINE EASEMENT IS NOT COMPROMISED IN THE LIGHT OF ADJACENT LAND USE DEVELOPMENT PLANNING.	60
3. THE EXTENT OF THE PROPOSED WORK CAN BE JUSTIFIED ON THE GROUNDS OF THE NATURE OF THE MIDLAND FACILITY WHICH NEEDS TO BE REPLACED AND THE ADVANTAGES IDENTIFIED IN CO-LOCATING HEADQUARTERS, ADMINISTRATION AND STORES FUNCTIONS IN THE ONE COMPLEX.	61

(18)

	Paragraph
5. THE GUILDFORD SITE IS SUITABLE FOR THE TYPE OF DEVELOPMENT PROPOSED AND PROVIDES SUFFICIENT SPACE FOR EXPANSION.	61
6. THE LIMIT OF COST ESTIMATE FOR THE PROJECT IS \$8.2 MILLION AT APRIL 1986 PRICES.	66
7. THE COMMITTEE RECOMMENDS THE CONSTRUCTION OF THE WORK IN THIS REFERENCE.	69

D.J. Foreman.
(D.J. FOREMAN)
Chairman

Parliamentary Standing Committee
on Public Works
Parliament House
CANBERRA

21 August 1986

(19)

LIST OF WITNESSES

Cross, Brigadier F.J., Director-General of Accommodation and Works (Army), Department of Defence, Russell Offices, Canberra, A.C.T., 2600

Jones, Lieutenant-Colonel C.M., Commanding Officer, 51st Supply Battalion, Irwin Barracks, Karrakatta, W.A.

Martin, Mr G.S., Associate Director (Projects), Department of Housing and Construction, W.A. Region, Sheraton Court, 207 Adelaide Terrace, Perth, W.A., 6000

McKinnon, Lieutenant-Colonel R.J., Project Manager, Director-General of Accommodation and Works (Army), Department of Defence, Russell Offices, Canberra, A.C.T., 2600

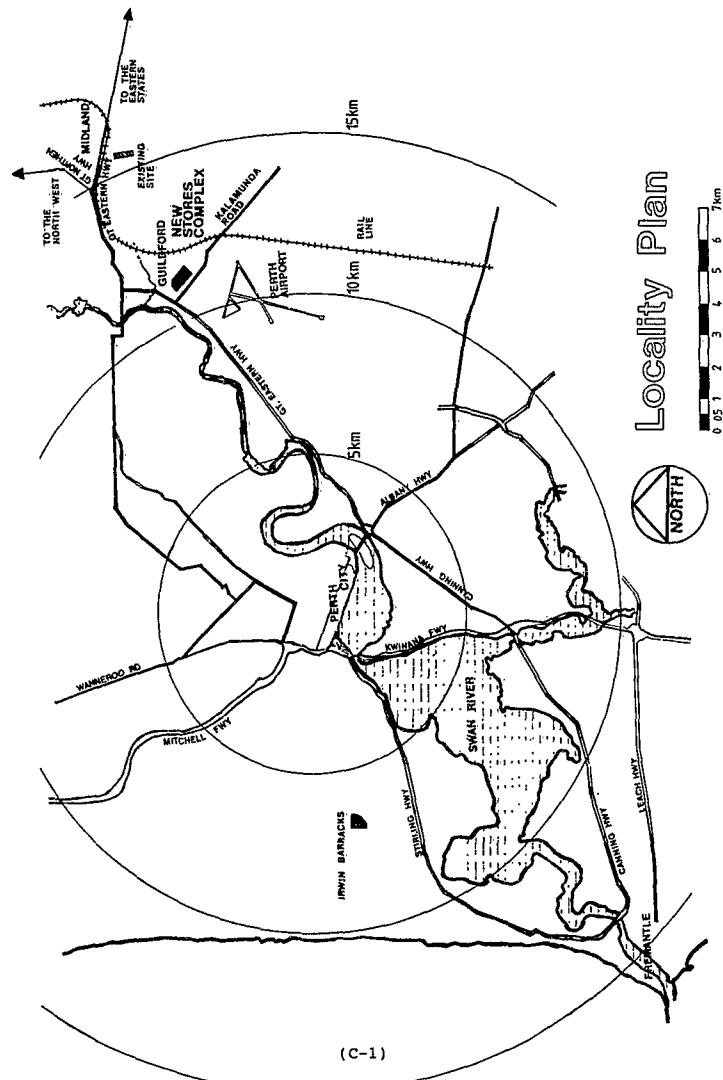
Williams, Mr M.B., Chief Architect (Defence), Department of Housing and Construction, Central Office, 470 Northbourne Avenue, Dickson, A.C.T., 2602

CONSTRUCTION DETAILS

1. Structure and Exterior Finishes The warehouse headquarters and amenities buildings will each have stud framed storehouses. Ancillary buildings will have a stud frame, brick or reinforced concrete structure. All buildings will have reinforced concrete floors and ceilings.
2. The warehouse building will be clad with prefinished steel sheeting.
3. The headquarters, amenities and ancillary buildings will have brick external walls and prefinished steel sheet roofing.
4. Interior Finishes Internal walls will be lightweight steel frame partitions lined with plasterboard except for wet areas and plant rooms.
5. Carpet will be provided in office areas of the Headquarters building and in the foyer and lunch rooms of the amenities building. Ceramic floor tiles will be provided in wet areas. Sheet vinyl will be laid in offices in the warehouse.
6. Ceilings to the Headquarters and amenities buildings will generally be suspended fibre acoustic tiles. The required sound alternation from aircraft noise will be obtained by fixing plasterboard to the underside of the roof purlins.
7. Air conditioning and Mechanical Services The Headquarters and amenities buildings will be air conditioned by means of duct work inside ceiling spaces.

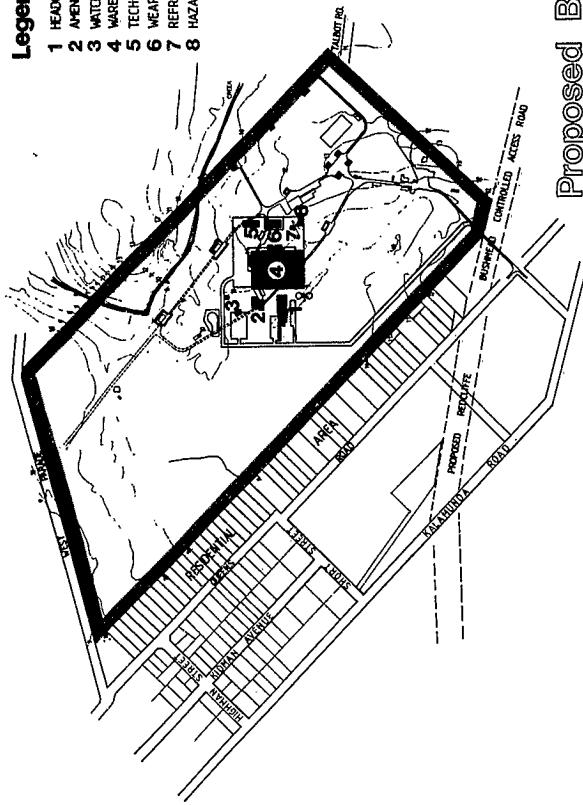
8. Abolition areas will be served by exhaust systems.
9. Other special areas will be provided with ventilation and extraction systems as required.
10. Electrical Services Electricity supply will be obtained from the State Energy Commission grid. A sub-station will be provided for the new working and storage accommodation and the existing facilities which will remain on the site.
11. Loading and unloading areas near the stores will be floodlit to facilitate night-time operations.
12. Stormwater Stormwater disposal from buildings and the site will be to the existing drainage system.
13. Landscaping Lawns and landscaping will be provided to the immediate vicinity of the sites of the proposed work.

(B-2)



Legend

1	HEADQUARTERS
2	AMENITIES
3	WATCHMAN
4	WAREHOUSE
5	TECHNICAL SUPPORT
6	WEAPONS STORE
7	REFRIGERATOR STORAGE
8	HAZARDOUS GOODS



(C-2)

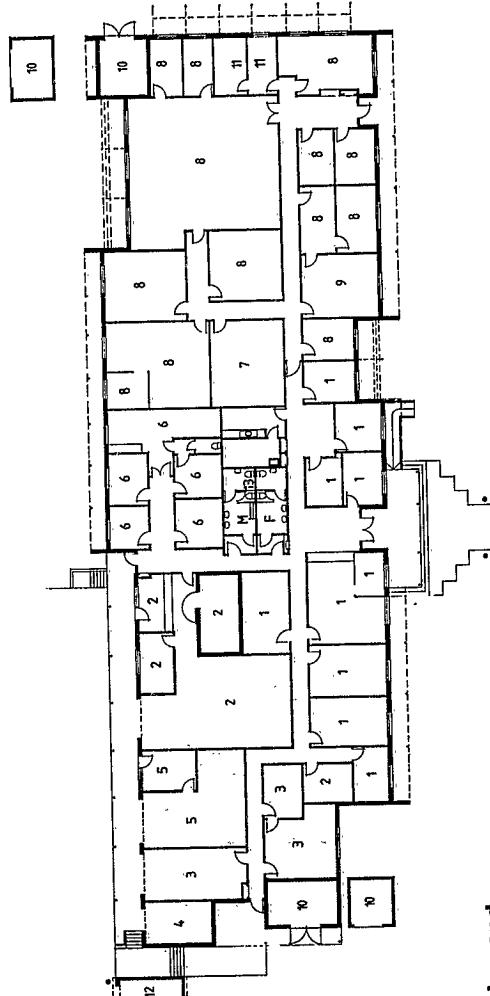
Proposed Buildings Existing Conditions Plan



(C-3)

Legend

1	HEADQUARTERS	2	QUARTERMASTERS	3	STORE	
1	2	3	4	5	MANTISSA	
1	2	3	4	5	GROUND MAINTENANCE	
1	2	3	4	5	VEHICLE ACCESSORIES	
1	2	3	4	5	REGIMENTAL AID POST	
1	2	3	4	5	RECORDS STORE	
1	2	3	4	5	8	BATTALION CONTROL
1	2	3	4	5	9	CONTROL OFFICE COMPUTATION
1	2	3	4	5	10	PLANT ROOM
1	2	3	4	5	11	TELEPHONE
1	2	3	4	5	12	CARPORT
1	2	3	4	5	13	TOOL FTS

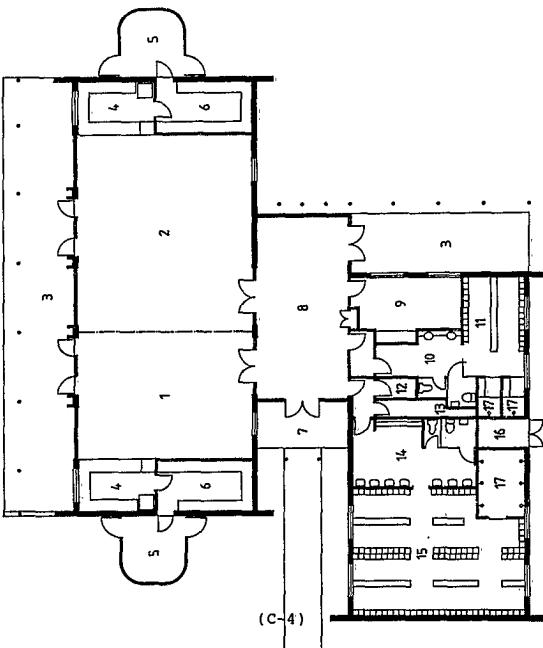


Headquarters



Legend

- 1. OFFICERS/SNCO'S LUNCH ROOM
- 2. OTHER RANKS LUNCH ROOM
- 3. VERANDAH
- 4. MEALS SERVING
- 5. REFUSE ENCLOSURE
- 6. STORE
- 7. MAIN ENTRY
- 8. ENTRY FOYER
- 9. WATCHMEN'S LUNCH ROOM
- 10. FEMALE TOILETS
- 11. FEMALE LOCKER ROOM
- 12. CLEANERS ROOM
- 13. DUCT
- 14. MALE TOILETS
- 15. MALE LOCKER ROOM
- 16. PLANT
- 17. SHOWERS



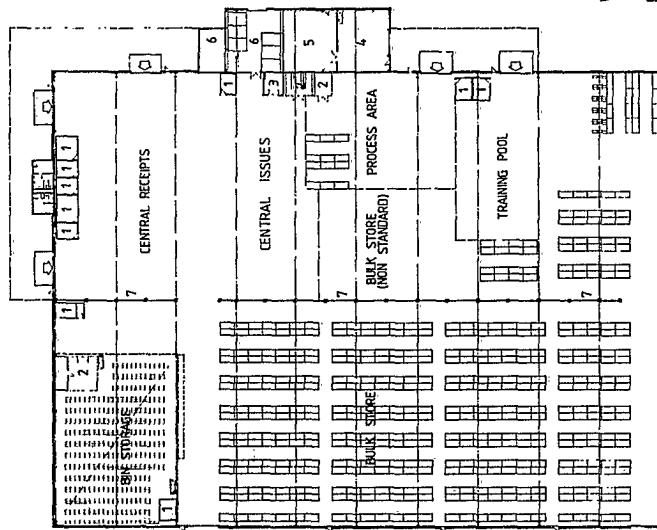
Plan

Amenities



Legend

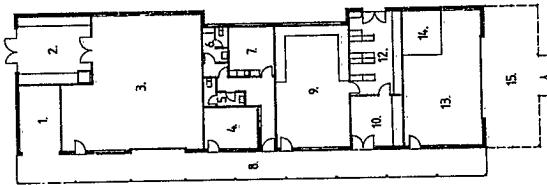
- 1. OFFICE
- 2. SECURITY BAY
- 3. FOAM PACKING
- 4. TREATMENT AND PACKAGING
- 5. WAREHOUSE EQUIPMENT STORE
- 6. FORK LIFT SERVING
- 7. FIRE WALL



(C-5)

Warehouse

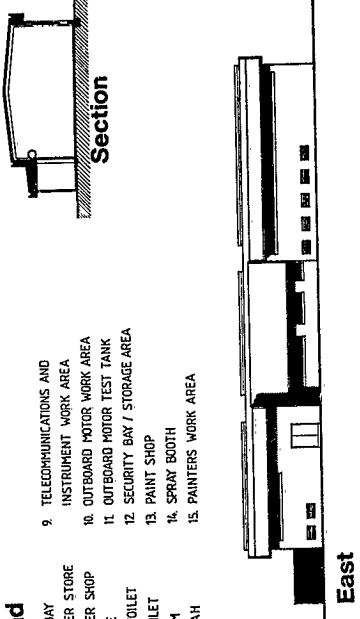




Legend

1. SERVICE BAY
2. CARPENTER STORE
3. CARPENTER SHOP
4. O.C. OFFICE
5. FEMALE TOILET
6. MALE TOILET
7. TEA ROOM
8. VERAINDAH
9. TELECOMMUNICATIONS AND INSTRUMENT WORK AREA
10. OUTBOARD MOTOR WORK AREA
11. SECURITY BAY / STORAGE AREA
12. PAINT SHOP
13. SPRAY BOOTH
15. PAINTERS WORK AREA

(C-6)



East

Plan

Technical Support

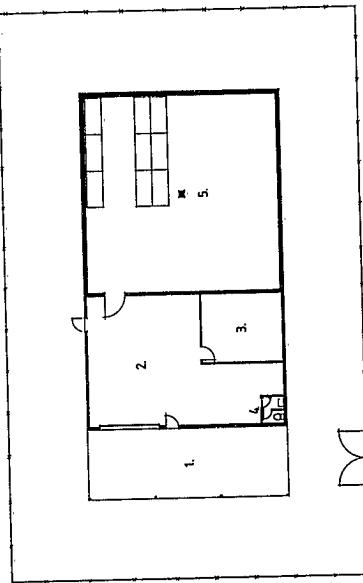
0 5 10 20 M



West



North



Plan

(C-7)

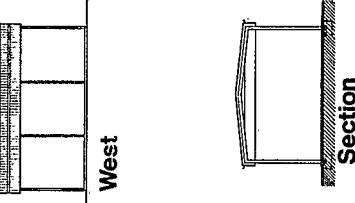
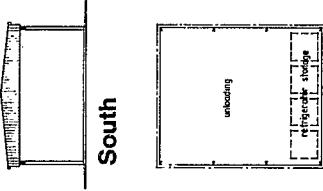
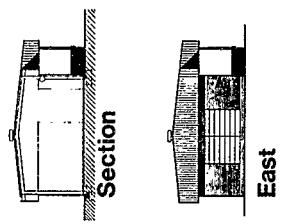
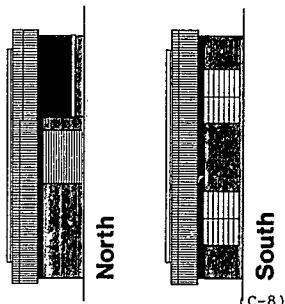
Weapons Store

0 5 10 20 M



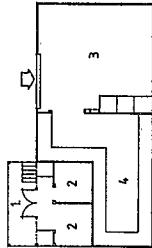
Legend

1. LOADING/UNLOADING
2. WORK AREA
3. ARMOURER
4. TOILET
5. VAULT

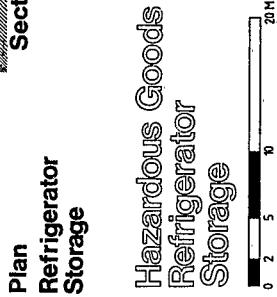


Legend

1. UNLOADING DOCK
2. BOTTLED GAS
3. ACIDS
4. FLAMMABLE / POISONS



Plan Hazardous Goods



0 5 10 20 M