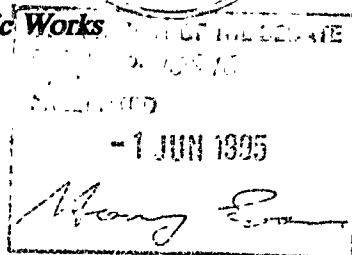


Parliamentary Standing Committee on Public Works



REPORT

relating to the proposed

HOUSING DEVELOPMENT AT HMAS COONAWARRA, NORTHERN TERRITORY

(Eighth Report of 1995)

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

Report relating

to the proposed

**Housing development at
HMAS *Coonawarra*, Northern Territory**

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MEMBERS OF THE PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS

(Thirty-First Committee)

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

Senate

House of Representatives

Senator Bryant Robert Burns	Mr John Neil Andrew MP
Senator Shayne Michael Murphy*	Mr Raymond Allen Braithwaite MP
	Mr Russell Neville Gorman MP
	Mr Robert George Halverson OBE MP
	Hon. Benjamin Charles Humphreys MP

*Replaced Senator John Devereux on 10 February 1995

Committee Secretary:	Peter Roberts
Inquiry Secretary:	Michael Fetter
Secretarial Support:	Mahesh Wijeratne

COMMONWEALTH OF AUSTRALIA

Public Works Committee Act 1969

Order under subsection 18(4)

I, WILLIAM GEORGE HAYDEN, Governor-General of the Commonwealth of Australia, acting with the advice of the Federal Executive Council and under subsection 18(4) of the *Public Works Committee Act 1969*, hereby, by this Order, declare that the public work described in the Schedule be referred to the Parliamentary Standing Committee on Public Works for consideration and report.

SCHEDULE

Housing Development at HMAS *Coonawarra*, Northern Territory

Given under my Hand and the
Great Seal of Australia
on 20 December 1994

L.S.

BILL HAYDEN

Governor-General

By His Excellency's Command

Frank Walker

Minister for Administrative Services

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS

HOUSING DEVELOPMENT AT HMAS *COONAWARRA*,
NORTHERN TERRITORY

On 20 December 1994 the Executive Council referred to the Parliamentary Standing Committee on Public Works for consideration and report to Parliament the proposed Housing Development at HMAS *Coonawarra*, Northern Territory.

THE REFERENCE

1. The continuing increase of Service personnel and their families associated with the Army Presence in the North (APIN) requires 810 additional housing units between now and the year 2000 in the Darwin area to accommodate Defence personnel and their families.
2. The proposal referred to the Committee involves the construction of 32 family dwellings by the Defence Housing Authority on HMAS *Coonawarra*. The site for the proposed housing is adjacent to existing family units which have been completed over the past two years. Upon completion the new houses will be allocated to families of Army non-commissioned and commissioned officers. Included in the project are supporting community facilities.
3. When referred to the Committee the estimated cost of the proposed work was \$6.8m.

THE COMMITTEE'S INVESTIGATION

4. The Committee received a submission and drawings from the Defence Housing Authority (DHA) and took evidence from DHA representatives at a public hearing held in Darwin on 20 February 1995.
5. The Committee also received written submissions and took evidence from the following organisations:
 - Department of Defence
 - Northern Territory Government – Department of Lands, Housing and Local Government

- Tenants Consultative Group (TCG).

6. Written submissions were also received from the following organisations:

- Darwin City Council
- Childcare at Work
- Commonwealth Fire Board
- Australian Heritage Commission.

7. Prior to the public hearing the Committee inspected a recently completed housing development at HMAS *Coonawarra*, the site proposed for the new housing development and housing developments at Palmerston. The opportunity was taken to also inspect the immediate surroundings of HMAS *Coonawarra* for orientation purposes.

8. A list of witnesses who appeared before the Committee at the public hearing is at Appendix A.

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

BACKGROUND

10. DHA commenced its operations in the Northern Territory in 1989 and since then has increased its inventory by 500 homes. At present DHA has 1034 houses in Darwin. Of these 868 houses were constructed by the DHA or the Commonwealth, 158 were spot purchased and eight are leased. Housing administered by DHA in Darwin is located as follows:

- 330 houses in Darwin suburbs - these are in the main good quality homes, located close to community facilities; they are perceived by Defence personnel as meeting community standards. Ten substandard houses will be disposed of during the next year and replaced with more modern houses
- 131 good quality houses at Larrakeyah Barracks occupied by Army and Navy personnel and their families

- 140 good quality houses at HMAS *Coonawarra* occupied by Army and Navy personnel and their families
- 396 houses on RAAF Base darwin which are occupied by Army, Navy and RAAF personnel and their families. Of the 396 houses, 360 were categorised by the Services as below acceptable standards. DHA considers the houses to be in good condition and has initiated a program to improve them. The program is due for completion by June 1996
- 37 housing units at Palmerston, located 22 km south-east of darwin, comprising 20 which have been constructed and 17 spot purchased. Most of these houses have been allocated to the Army and are occupied by 2nd Cavalry personnel and their families.

THE NEED

Defence relocation to the north

11. The need for additional housing for Defence personnel in Darwin originated in 1987 when the Defence White Paper - The Defence of Australia, was tabled in Parliament. The White Paper outlined the basis of future Defence planning and included a requirement for the Army to develop mobile ground forces capable of defeating incursions at remote localities and a capability to sustain operations remote from logistic support centres. It announced the relocation of Second Cavalry Regiment from Holsworthy to Darwin and foreshadowed the possible relocation of an Army brigade to the north.

12. In May 1991 the Minister for Defence announced details of the Defence Force Structure Review which included the permanent basing of a Regular Army brigade in Darwin. In particular the Minister stated that an armoured regiment of one Regular Army tank squadron, logistics support elements and an aviation squadron would be relocated to Darwin by 1995, followed by an infantry battalion in 1998.

13. The relocation of numerous Army units to northern Australia has stimulated a considerable demand for housing.

14. A representative of the TCG advised the Committee that difficulties have been experienced by personnel currently receiving Temporary Rental Allowance (TRA). At the time of the public hearing 115 of the 150 households receiving TRA were Army families. The Committee was advised that ceilings which are imposed on TRA, the high levels of rent charged by the private sector and the desire of personnel and their families to rent accommodation at a standard commensurate with their entitlements, may mean them being financially disadvantaged by relying on TRA. The Committee shares the view that TRA should provide a buffer to be used to a limited extent to provide flexibility. It should not be used to any significant extent to rectify longer term deficiencies in the number of houses available.

15. At the public hearing Defence advised the Committee that DHA have committed themselves to an accelerated program of acquisitions during the 1995/96 acquisition cycle from 140 to 215. This program, and the influx of Army personnel from 1 Armoured Regiment which is scheduled to commence in June/July and extend through to December, will mean that reliance on TRA will be reduced to an acceptable level. Nevertheless, even with an accelerated acquisition program the DHA believes there will be a continuing need for additional housing for Defence personnel relocated to Darwin.

16. Current Defence planning is that the number of Defence personnel in Darwin will increase from about 7200 at present to 13 800 by 2001. If a proposal involving further naval elements being relocated to the North proceeds, the number could rise to 15 000. It is clear that in this planning context the continuing requirement for Defence housing could be significant.

17. According to DHA there is a shortage of developable land in Darwin and limited scope for spot purchases. DHA advised the Committee that Defence requires an additional 108 homes to be provided in the Northern Territory during the current financial year. Projections of housing requirements for the APIN Project (Army Presence in the North) are as follows:

	Requirement
1994/95	1696
1995/96	1919
1996/97	1975
1997/98	2121
1998/99	2468.

18. Planning projections beyond December 1994 are subject to further review in consultation with Defence due to changing operational requirements.

19. The Committee is currently examining an additional joint venture housing development in Palmerston which it is planned to provide 740 dwellings for Defence personnel and their families.

Committee's Conclusions

20. There will be a need for a continuing program of housing acquisitions or Defence Housing Authority-sponsored new construction to be provided in Darwin to cater for planned relocation of Defence personnel associated with the Army Presence in the North project.

21. In order to reduce reliance on Temporary Rental Allowances and to avoid over-reliance on acquisitions, there is merit in the Defence Housing Authority proceeding with the funding and development of new construction.

THE PROPOSAL

22. The proposal involves the construction of a cluster development of 30 houses on a site at HMAS *Coonawarra*, adjacent to the existing housing precincts.

Site description

23. HMAS *Coonawarra* is an extensive site which has been developed along a broad north-south ridgeline south of the Stuart Highway. The main naval facilities are located along the highway frontage and form a branching pattern from the central Mountbatten Avenue and Belconnen Way road access.

Native title

24. The Committee questioned the DHA about the existence of any claims made under native title legislation upon the site. The Committee was advised that the Navy controls the land and all investigations have revealed that native title is not an issue at this stage.

Soil contamination

25. The Committee was advised that soil tests on the site have been undertaken for construction purposes only. The DHA advised the Committee that based on previous use of the land there is nothing to suggest that any of the area to be used for housing is affected by unexploded ordnance or other contaminants. DHA assured the Committee that as part of normal processes a thorough check of the land will be undertaken.

On-base housing

26. Recent on-base housing by DHA has consolidated housing development in accordance with a 1991 master plan. Residential planning at HMAS *Coonawarra* was influenced by the siting of naval facilities around the main vehicular access routes and by a deliberate policy to separate residential areas from the working areas.

27. Recent on-base housing development has seen the consolidation of the existing residential precinct with project homes being built along the continuation of Phaup Crescent. The construction of medium density housing precincts has commenced and at the time of the Committee's inspection of the base, Precinct A was nearing completion.

Community facilities at HMAS *Coonawarra*

28. Families at HMAS *Coonawarra* have access to a range of community facilities located on and off-base. These facilities include:

- ☐ public transport
- ☐ shopping - in addition to shopping facilities in Darwin and Palmerston Town Centre, there is a variety shop on-base
- ☐ education - several private schools and many government primary and high schools located throughout the wider Darwin region are accessible to residents at HMAS *Coonawarra*
- ☐ health facilities - the Royal Darwin Public Hospital and Darwin Private Hospital are conveniently located to the base and the on-base sick bay is available for emergency medical treatment.

Recreation and public open space

29. HMAS *Coonawarra* has a range of sporting and recreational facilities, attractive parks and open spaces. The DHA advised the Committee that further design development would refine public spaces and provide recreational facilities which may include:

- ☐ childrens' playgrounds
- ☐ open space play activities
- ☐ tennis courts and basketball courts
- ☐ barbecue and picnic facilities
- ☐ shade structure
- ☐ community centre.

30. The intention of the design is to create a comfortable and useable environment for personnel which maximises the use of landscape resources available on the site. The DHA believes that by adopting this approach and developing 'green street' design principles for the arrangement of residences within the site, a visual identity can be created for the community.

Childcare facilities

31. The TCG advised the Committee that there is no justification for the provision of on-base childcare facilities at present, but as the number of personnel living on-base increases, there may be a sustainable demand for them. The DHA advised that discussions with the TCG about on-base childcare facilities will continue.

Suitability of site

32. The suitability of the base for housing development was canvassed extensively in submissions and evidence presented at the public hearing. The major focus of attention relates to noise generated from three sources:

- ☐ the Hidden Valley Motor Sports Complex located about 800 metres from the site of Precinct B

- the Stuart Highway (to the north) and future arterial road proposals including the extension of Tiger Brennan Drive (to the south) and Amy Johnson Avenue (to the west)
- aircraft noise - the base falls within the 20-25 ANEF contours.

33. DHA indicated an awareness of the potential problems associated with noise generated by the three different sources. In relation to the motor sports complex, DHA believes the distance between Precinct B and the speedway to be significant in reducing noise impact. Nevertheless in 1991 acoustic consultants analysed the noise impact associated with the motor sports complex. The study found that noise levels were in the range of 65-70dB(A), suggesting that the site is not suitable for residential development. The analysis concluded that any decision to proceed with additional housing on the site would need to be on the basis that other desirable factors outweigh the disadvantages of relatively high noise impact from motor racing.

34. DHA believes that the following factors, which have resulted in the proposal being developed, outweigh the noise intrusions from the motor sports complex:

- race meetings are held every second Saturday night during the dry season and conclude at 11.00pm
- negotiations are being conducted between the Northern Territory Government and the Darwin Motor Sports Club with a view to controlling noise levels, frequency and timing of motor sports events
- the acute shortage of land available for housing in the Darwin area
- tenant responses to inquiries about the impact of noise from the complex indicated other noise sources which residential communities face in other locations could be expected if the complex were not located near the base

- the significant number of houses on the base and the high level of demand and choice by Service families to live on the base. This has a number of advantages such as security and access to facilities which would offset disadvantages from noise

35. Aircraft noise, associated with aircraft movements at Darwin airport, have been the subject of two studies. The Northern Territory Government indicated two forecasts have been prepared. One, a forecast current until 1997, places the development outside the critical 20 ANEF contour. The second, revised draft forecast current until 2004, places the development within the 20-25 ANEF.

36. DHA believes that the impact of aircraft noise on Precinct B is less than at a number of other locations in Darwin.

37. The Northern Territory Government advised the Committee that the site will be affected by future road proposals although noise generated from these roads is likely to be less intense than from the motor sports complex but will be more constant. DHA indicated that the proposed road extensions were taken into consideration during the planning of Precinct B. The site is at least 160m from the Amy Johnson Avenue road reserve. DHA believes that the road will be a 'cut' rather than a 'fill' situation for a major portion of the length adjacent to the base. The reserve for the extension of Tiger Brennan Drive is a similar situation.

38. The TCG believes the noise impacts are outweighed by the benefits of living on the base. The Committee questioned the representative of the TCG about the impact of the noise and was advised that:

- it is important for Defence personnel to have a choice of housing made available to them and many prefer to live on-base for a number of reasons, including security
- HMAS *Coonawarra* is a very pleasant place in which to live and is quiet for 98% of the time—the noise from the Hidden Valley Raceway finishes at 11.00pm.
- the housing development at HMAS *Coonawarra* should be extended because most personnel to be relocated will be from Puckapunyal, which has on-base housing

- close proximity to neighbours and an apparent lack of privacy are part of life in Darwin and are generally accepted.

39. The Committee also questioned the DHA if in the unlikely event a surplus of Defence housing occurred in Darwin due to a diminution of the Defence presence, it is sound business practice to construct houses on Commonwealth land comprising a major Defence establishment. The DHA indicated that if a diminution were to occur, the Fairview Ridge and Palmerston golf course estates would be sold and there is sufficient land available on major bases in Darwin to provide for housing requirements.

40. The Committee also questioned the DHA about the presence of mosquitoes and midges at HMAS *Coonawarra*. DHA indicated that these insects pose problems for about 80% of the Darwin area and that the proposed location of the houses is reasonably removed from breeding areas. The Northern Territory Government raised the question of drainage works which will be required. Their design and construction must discourage mosquito breeding habitats. Midges breed in mangroves and the nearest mangroves are 1.6km from HMAS *Coonawarra*. DHA does not believe they will be a problem at HMAS *Coonawarra*.

Committee consideration

41. The Committee is mindful of the potential for problems, largely the result of noise, which may be caused by relocating Army personnel and their families to HMAS *Coonawarra*. Some personnel may find the level of noise unacceptable, others may not. In considering the merits of the proposal, the Committee is aware that it has the support of Defence, the Northern Territory Government and representatives of tenants. It is on the basis of this support and having highlighted problems which may arise, the Committee supports the further development of on-base housing at HMAS *Coonawarra*.

42. In summary, there is a shortage of land in Darwin which can be developed economically to provide housing sites for Defence force personnel and their families. Capacity for housing sites exists at HMAS *Coonawarra* although the base is subject to noise from a nearby racetrack and aircraft movements at levels approaching thresholds which urban planning authorities consider to verge on the land being rendered unsuitable for housing development. Defence, the DHA and representatives of Defence force tenants believe the disadvantages are outweighed by the benefits of

personnel living on-base, and the adaptability of prospective new tenants to infrequent noise.

Committee's Conclusion

43. While noise problems do exist at HMAS *Coonawarra*, further development of housing at HMAS *Coonawarra* can be justified on the basis of the shortage of available land for housing, the importance of choice of housing given to Defence personnel and the benefits from living on base.

Housing design concepts

44. The design of houses for Darwin must be appropriate for the local climate. DHA advised that the following design features will be provided:

- elevated floors
- site orientation - to capture maximum ventilation
- design features such as louvre windows to permit maximum cross flow ventilation
- cyclone proofing
- metal wall and roof cladding
- solar hotwater
- part airconditioning
- carports.

45. The designs of the three bedroom houses will provide for floor areas ranging in size from 136.5m² to 148.2m².

46. The Committee is pleased to note that attempts have been made to develop designs suitable for tropical conditions, but a number of design features which were raised by the Committee at the public hearing are discussed in the following paragraphs.

Suitability for the climate

47. DHA indicated that the key design element is flow-through ventilation, with banks of louvre windows. Other features include roofs with overhangs, insulated roofing, metal cladding and high ceilings with ceiling fans. Airconditioning is provided but DHA believes it is used infrequently because of the cost of electricity. Houses recently constructed in Darwin have attracted the highest post-occupancy survey rating for their suitability for climatic conditions in Darwin. In short, DHA believes the designs will provide optimal comfort conditions.

48. The representative of the TCG confirmed that the newer DHA houses are an improvement over the older style houses and attributed this to better airflow.

Airconditioning

49. It was pointed out to the Committee by Defence that relocation of Defence personnel to Darwin during the summer months causes significant acclimatisation problems amongst personnel and their dependents. The time of posting Army personnel to Darwin coincides with the wet season, although the Army is examining the practicality and feasibility of rescheduling transfers to the cooler and less humid 'winter' months. The Committee was advised by Defence of an anomaly in service conditions existing between Tindal/Katherine and Darwin. Personnel living in Tindal/Katherine are paid an airconditioning allowance whilst personnel in Darwin are not. The Committee believes following a number of inspections of facilities undertaken in Darwin and Katherine in recent years, a valid case could be made to rectify this anomaly.

Committee's Recommendation

50. The Department of Defence should examine extending the payment of the airconditioning allowance to personnel serving in Darwin.

Privacy

51. In recent years the Committee has inspected a number of completed housing developments undertaken by the DHA in Darwin. One impression formed was the density of detached houses and the consequentially apparent lack of privacy afforded to residents. This is an issue which the Committee

will be pursuing in reports involving further DHA housing developments in Darwin and Townsville. The lack of privacy seems to be a general shortcoming in the overall design of DHA housing estates. Furthermore, a number of completed DHA cluster housing developments also appear to be deficient in the degree of privacy that is achieved.

52. DHA acknowledged that with designs which provide banks of louvre windows to enhance cross-ventilation, noise transmission could be a problem. DHA also acknowledged that the density of housing at Larrakeyah was somewhat higher, but comments and complaints from residents have diminished with the maturity of landscaping. The design of the *Coonawarra* precinct B estate was changed to take account of experiences gained from the Larrakeyah project.

53. The TCG indicated that the northern lifestyle, with an emphasis on outdoors living for much of the year, is accepted as being different from lifestyles followed in southern states; it forms part of the lifestyle in Darwin.

Size of bedrooms

54. The size of bedrooms to cater for various family profiles was also questioned by the Committee. DHA believes that the housing which it has designed is able to stand the test of occupancy very well. Post occupancy surveys of all new dwellings give new houses in Darwin the highest rating. DHA also indicated that the habitability of houses is generally subjective, the size of bedrooms has been an issue discussed with the TCG. The DHA builds houses to community standards although the design process does include the provision of furniture layouts which stipulate that second bedrooms must be sized to accommodate two beds and the third and fourth single beds. Defence indicated that in terms of the sizes of bedrooms the standard of DHA housing is superior to that available on the commercial rental market in Darwin.

Safety features

55. The new houses will be provided with smoke detectors and earth leakage circuit breakers.

Solar hotwater heating

56. The Committee sought to establish the rationale for including solar hotwater heating for houses in Darwin and not at other centres such as Canungra. DHA indicated that the provision of solar hotwater heaters is based on community standards applying at various locations. In Darwin, solar hotwater heaters are generally accepted by the community because of the relatively high electricity charges. The question of extending solar hot water heaters to other centres is under consideration by the DHA Board. Concerns about maintenance costs, financial returns to the DHA from additional investment and the cost of retro-fitting existing houses, estimated at \$24m across Australia, will be matters to be considered.

PLANNING

57. DHA maintained that HMAS *Coonawarra* is outside the control of local planning authorities because it is on Crown land under the control of the Commonwealth. DHA indicated however that the development will be in accordance with local planning and development requirements.

58. At the public hearing, the Northern Territory Government drew attention to a recent decision of the High Court on the issue of the application of Territory laws to Commonwealth places (*Svikart v Stewart 1994*). The Court judged that section 52(i) of the Commonwealth Constitution¹ did not prevent the application of Territory laws to places in the Territory acquired by the Commonwealth for public purposes. The Northern Territory Government therefore believes that the site on which HMAS *Coonawarra* is located is subject to planning controls and must follow Northern Territory procedure.

59. Arising from this decision the Northern Territory Government advised the Committee that it will not insist that the proposed work in this particular instance should be progressed through territory planning procedures. Planning authorities have in the past worked closely with the DHA. The

¹The Parliament shall, subject to this Constitution, have exclusive power to make laws for the peace, order, and good government of the Commonwealth with respect to—

(i.) The seat of government of the Commonwealth, and all places acquired by the Commonwealth for public purposes:

High Court decision may change the approval processes in the future. DHA is seeking legal advice regarding the impact of this judgement on planning procedures and approvals in the Northern Territory.

CONSTRUCTION

Contracts

60. Construction arrangements will involve the DHA and builder entering into a single contract. The DHA will invite tenders from builders who have previously undertaken substantial work in Darwin in the past. Tenderers are selected on the basis of capital adequacy and their record in doing business with the DHA. Tenders will be assessed by a panel and the DHA believes the tendering process and the awarding of contracts is fair, honest and open.

61. The Committee questioned the DHA about safeguards which will be provided to protect subcontractors. DHA indicated that it can require builders to certify that subcontractors have been paid when submitting each progress claim. DHA is investigating making it a mandatory requirement for every builder on each project to certify proper payments have been made to subcontractors and suppliers.

Committee's Recommendation

62. It should be a mandatory requirement for all builders on Defence Housing Authority projects to be required to certify proper payments have been made to subcontractors and suppliers.

Quality assurance

63. The Committee asked the DHA if preference would be given to any contractor in possession of quality assurance certification. DHA advised the Committee that it does not believe certification of this type to be necessary because builders who in the past have undertaken sound work should not be disqualified due to lack of certification. The question is basically one of approaches to quality workmanship and the DHA believes its policy of quality management will produce high quality work.

COST

64. When referred to the Committee the estimated cost of the proposed work was \$6.8m. The Committee questioned the magnitude of the total cost of the proposal in view of the relatively small number of houses to be provided. DHA indicated that it has always accepted that higher construction costs will apply in Darwin. Cost components which are not provided for in southern states include:

- ☐ cyclone rating - \$40 000
- ☐ louvre windows - \$8000
- ☐ airconditioning - \$10 000
- ☐ finishes - \$15-20 000.

65. DHA indicated confidence in the unit cost estimates of \$206 000 to \$220 000 which compares favourably with the cost of housing at Palmerston. Some elements of the total cost will be expended on amplifying base facilities.

Committee's Recommendation

66. The Committee recommends the construction of a housing development at HMAS Coonawarra, Northern Territory at an estimated cost of \$6.8 million.

CONCLUSIONS AND RECOMMENDATIONS

67. The Committee's conclusions and recommendations and the paragraph in the report to which each refers are set out below:

Paragraph

- | | | |
|----|---|----|
| 1. | There will be a need for a continuing program of housing acquisitions or Defence Housing Authority-sponsored new construction to be provided in Darwin to cater for planned relocation of Defence personnel associated with the Army Presence in the North project. | 20 |
| 2. | In order to reduce reliance on Temporary Rental Allowances and to avoid over-reliance on acquisitions, there is merit in the Defence Housing Authority proceeding with the funding and development of new construction. | 21 |
| 3. | While noise problems do exist at HMAS Coonawarra, further development of housing at HMAS Coonawarra can be justified on the basis of the shortage of available land for housing, the importance of choice of housing given to Defence personnel and the benefits from living on base. | 43 |
| 4. | The Department of Defence should examine extending the payment of the airconditioning allowance to personnel serving in Darwin. | 50 |
| 5. | It should be a mandatory requirement for all builders on Defence Housing Authority projects to be required to certify proper payments have been made to subcontractors and suppliers. | 62 |

6. The Committee recommends the construction of a housing development at HMAS *Coonawarra*, Northern Territory at an estimated cost of \$6.8 million.

Colin Hollis MP
Chair

11 May 1995

66

APPENDIX A

WITNESSES

BUTLER, Mr Michael, Regional Manager (NT) Defence Housing Authority, 37 Gregory Street, Parap, NT.

DAVID, Mr Edwin Joel Sherring, General Manager, Operations, Defence Housing Authority, 2 Brisbane Avenue, Canberra, ACT.

FANNING, Mrs Wendy Louise, Chairperson, Tenants Consultative Group, 27 Kelaher Road, HMAS *Coonawarra*, NT.

GIBBONS, Colonel Peter Douglas, Chief of Staff, Headquarters, NORCOM, Department of Defence, Larrakeyah Barracks, NT.

GRONOW, Mr John Richard, Director, Planning Branch, Department of Lands, Housing and Local Government, Cavenagh Street, Darwin, NT.

KEELER, Mr David, Capital Project Manager Darwin, Defence Housing Authority, 37 Gregory Street, Parap, NT.

PINNEY, Mr John Maurice, Deputy Secretary, Department of Lands, Housing and Local Government, 2nd Floor, AMP Building, Cnr Cavenagh and Knuckey Street, Darwin, NT.

QUILL, Mr Stephen Anthony, General Manager, Capital Projects, Defence Housing Authority, 44 Hampden Road, Atarmon, NSW.

REID, Major Stephen Frank, Officer Commanding Admin Company, Army Housing, ASUD Larrakeyah Barracks, NT.

APPENDIX B

PLANS

Page

Concept site plan B - 1

Elevations - Precinct B B - 2

GROUP FURTHER
STATIONS TO
STATION ONE

WIDE TRAFFIC FLAN

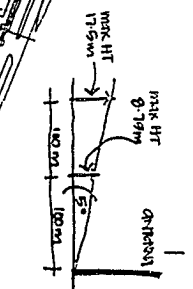
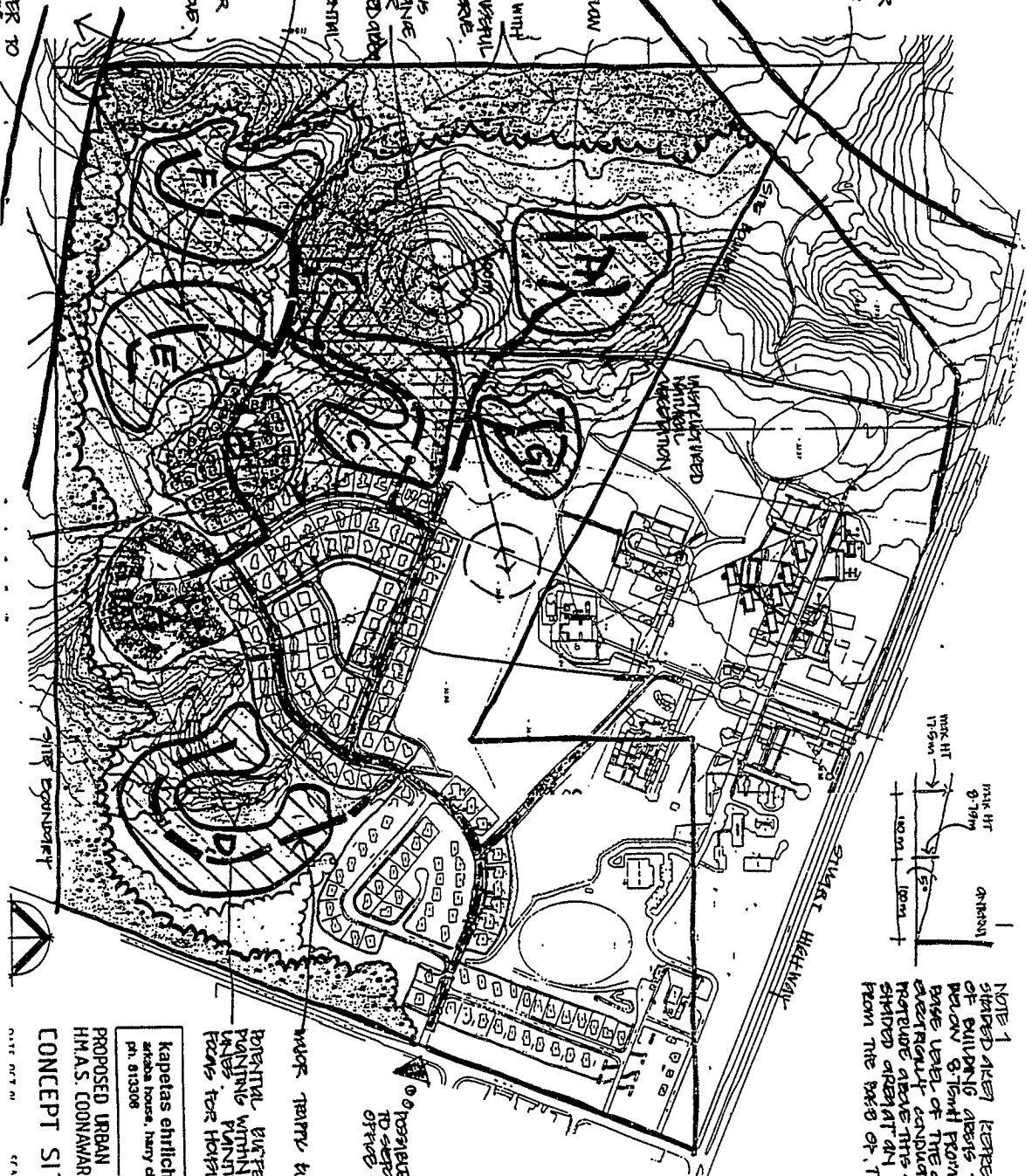
AREA, LOWLAND WITH
OR BEARING
INTERPRETATION, VISUAL
RECONSTRUCTION

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NOTE 1
SHAPED AREA REPRESENTS
OF BUILDING AREAS TO BE BUILT
BELOW 8.75m FROM THE GROUND
BASE LEVEL OF THE ANTENNA. NO
EXTRAORDINARY CONSIDERATION
REQUIRED ABOVE THIS HEIGHT TO
SHAPED AREA AT AN ANGLE OF 6°
FROM THE BASE OF THE ANTENNA

B - 1

POSSIBLE BUNKER
TO SEPARATE RESIDENTIAL
OFFICE TRAFFIC

WIDE TRAFFIC FLAN

POSSIBLE BUNKER
TO SEPARATE RESIDENTIAL
OFFICE TRAFFIC

POSSIBLE BUNKER
TO SEPARATE RESIDENTIAL
OFFICE TRAFFIC

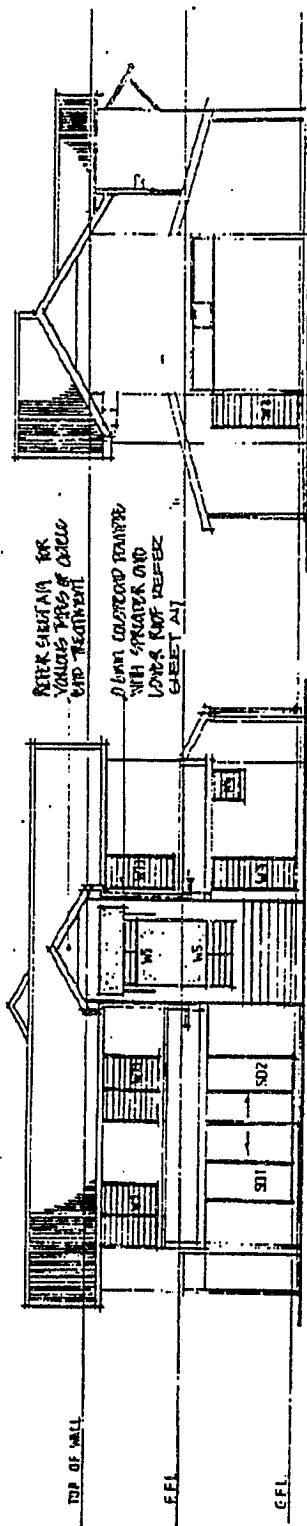
PROPOSED URBAN DESIGN CONCEPT
H.M.A.S. COONAMARA

CONCEPT SITE PLAN

DATE: 07/07/00

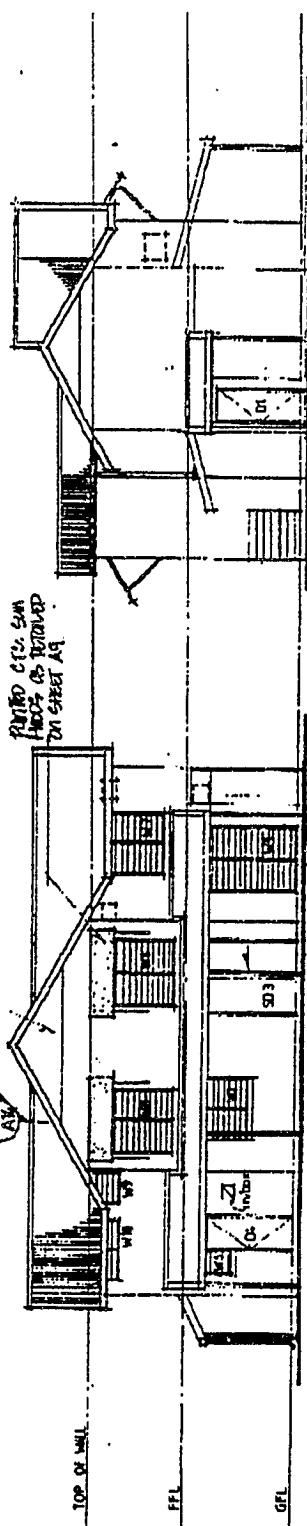
SCALE: 1:5000

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1 ELEVATION

2 ELEVATION



3 ELEVATION

4 ELEVATION

ROOF TYPE 2