3

The proposal

3.1 The Lavarack Barracks redevelopment Stage 3 proposal is focused on providing facilities for 3rd Brigade as well as some Training Command facilities. Stage 3 will also fund residual roadworks, high voltage reticulation and demolition deferred from the Lavarack Barracks Stage 2 redevelopment project.

3.2 The proposed facilities will comprise:

- office accommodation;
- training facilities;
- storage facilities;
- communication facilities;
- dental care;
- workshops;
- vehicle shelters and transport compounds;
- site wide civil engineering and services infrastructure works; and
- site works.

3.3 The infrastructure that will be enhanced to support the Lavarack Barracks Redevelopment Stage 3 will include:

- water supply;
- power supply;
- communications cabling;
- security;
- roadworks;

- new wash point at the western end of the base;
- sewerage; and
- stormwater.

3.4 The proposals relating to specific units follow.

Headquarters 3rd Brigade

3.5 The following facilities are proposed for Headquarters 3rd Brigade and closer supporting units:

- office accommodation;
- workshops and compounds for vehicles and equipment;
- stores accommodation; and
- security provisions to allow unrestricted information flow commensurate with the operational requirements.

3.6 The indicative Headquarters 3rd Brigade precinct plan and layouts of key buildings are at Annex C, figures 1-4.[1] The precinct plan locates the Brigade command facility centrally on the Lavarack site in accordance with the Master Plan. Importantly, it collocates Headquarters 3rd Brigade with 103rd Signal Squadron and the Lavarack Communication and Information Systems Centre.

1st Battalion Royal Australian Regiment and 2nd Battalion Royal Australian Regiment

3.7 The following new facilities are proposed for 1RAR and 2RAR respectively:

- office accommodation;
- stores accommodation including secure weapons storage;
- training accommodation;
- vehicle compounds; and
- workshops.

1 See Maps 5-11.

3.8 It is intended to site the buildings to enhance the functional relationship with Headquarters 3rd Brigade. As the buildings within both battalions will service similar needs it is intended to provide common use facilities for major training facilities, vehicle workshops and parade grounds, where practicable.

3.9 Limited refurbishment for surge accommodation is also intended.

3.10 The indicative 1RAR and 2RAR precinct plan and layouts of key buildings are located at Annex C, figures 5-7.[2]

3.11 The Committee was advised that the current master plan which changes the layout of the Brigade does not preclude reestablishing a third battalion at the Barracks should the decision to do so be taken at some stage in the future.[3]

3rd Combat Engineer Regiment

3.12 The following new facilities are proposed for the 3rd Combat Engineer Regiment:

- office accommodation;
- centralised stores areas including secure weapons storage;
- conference rooms and outdoor training shelters;
- vehicle shelters and associated vehicle compounds;
- purpose designed workshops for vehicle repair and engineering; and
- upgraded environmental (air, water and noise) controls.

3.13 The indicative 3rd Combat Engineer Regiment precinct plan and layouts of key buildings are located at Annex C, figures 8-9.[4]

3rd Brigade Administrative Support Battalion

3.14 The following new facilities are proposed for the Dental Clinic:

- office accommodation;
- sterilisation facility;

2 See Maps 12-17.

3 Brigadier Garry Kelly, Evidence, p.3.

4 See Maps 18-21.

- dental surgeries; and
- storage facilities.

3.15 The indicative layout of the building is located at Annex C, figure 12.[5]

Training Precinct

3.16 The following new facilities are proposed for the Training Precinct:

- Army Promotions Training Centre; and
- Army Library to service North Queensland.

3.17 The indicative Training precinct plan and layouts of buildings are located at Annex C, figures 13-14.[6]

The Robertson Barracks model

3.18 The Committee was advised that the planning process for this stage of the redevelopment has been informed by the experience of establishing the 1st Brigade at Robertson Barracks in Darwin, notwithstanding that the 1st Brigade is a heavy brigade and the 3rd Brigade a light brigade.[7]

3.19 The construction of Robertson Barracks provided an opportunity to develop a brigade on a greenfields site. Defence considers the Robertson Barracks working accommodation to be a robust and effective facilities solution, and therefore an appropriate model to guide planning for Lavarack Barracks.[8]

3.20 For example, the proposal to separate the headquarters at company level and above away from working accommodation at Lavarack Barracks is based on the experience at Robertson Barracks where, as Brigadier Kelly described:

> battalion and company equivalent headquarters were separated from what I would call the 'dirty area'. It has been very successful in Robertson Barracks where we have grouped, for example, Q stores, transport, weapons storage, showers and DP1 – the personal equipment of the soldier – all in one area so that the

5 See Maps 26-27.
6 See Maps 28-31.
7 Brigadier Garry Kelly, Evidence, p.3.
8 Defence, Submission, p.9.

> 'dirty areas' are kept away from the administrative areas. That has been very successful at Robertson … That is the intention here – as a starting point. We will look at that closely with the user.[9]

3.21 Accordingly, it is proposed that at Lavarack Barracks the headquarters at company level and above will generally be separated from working accommodation. Platoon and troop level accommodation will be located in working areas comprising stores, training and workshop facilities. These working areas will be provided with more robust finishes and furnishings. Lunchrooms will be provided in working areas, with a dual role as platoon training rooms. Showers and change facilities will be provided for all staff in proximity to storage areas for individual field and deployment equipment.[10]

3.22 At Robertson Barracks vehicle accommodation has a 25 per cent expansion capability. Based on this model, the proposed vehicle accommodation at Lavarack Barracks will also take into account future expansion.

3.23 Robertson Barracks have been constructed in such a way as to allow for significant change with buildings that have maximum internal flexibility, with modules and readily moveable walls.[11]

Air conditioning

3.24 Unlike Robertson Barracks, the majority of the new buildings at Lavarack Barracks will not be air conditioned. Army has decided against having an air conditioned environment where people work in air conditioned surroundings:

> but then cannot continue to function in the rigours of the real environment. So it is all about acclimatisation.[12]

3.25 The Townsville climate is more amenable than that of Darwin to constructing buildings which provide comfortable working conditions, using some solar passive and other measures in preference to creating an artificial environment with air-conditioning.

9 Brigadier Garry Kelly, Evidence, p.4.

10 Defence, Submission, pp.13-14.

11 Brigadier Garry Kelly, Evidence, p.8.

12 Lieutenant Colonel James Dittmar, Evidence, pp.16-17.

Design features

3.26 Defence advised in its submission that the building designs will incorporate the general design features outlined below:

- new buildings and workshops will typically be steel and/or concrete framed structures placed on a stiffened concrete floor with high level footings. Generally, buildings will be clad in metal or similar low maintenance materials appropriate to the type and use of each building;
- roofs will be of metal construction. Transverse joins in roofing sheets will be avoided where possible to improve strength in high wind conditions;
- internal partitions will be masonry or steel framed construction;
- office areas will be provided with treatments to ceilings and windows to achieve noise attenuation to 60 dBA where necessary;
- glazing will address the issues of thermal efficiency, acoustics, control of natural lighting and screening, and in some cases be tinted for sun protection;
- all ablution areas will be appropriately ventilated;
- electrical power supplies will be drawn from the Barracks electrical system. Main switchboards will be separately housed and segregated. Provision will be made for emergency power supply to be connected to critical operational areas;
- water and sewerage connections will be made to the existing systems, and fire detection devices will be connected to a central fire monitor board;
- engineering services will be designed to normal commercial standards, and roads and hardstands will be designed for assessed vehicle usage; and
- air-conditioning will generally be provided only to training and conference facilities, and in facilities such as those housing sensitive equipment where security concerns may require complete enclosure of the asset.[13]

13 Defence, Submission, pp.29-30.

Standards for working accommodation

3.27 The Commonwealth Accommodation Guidelines will be used to provide a framework for the design of office accommodation for the Lavarack Barracks Stage 3 works. Defence advised that the guidelines used for the Lavarack Barracks Redevelopment are similar to those used for projects such as RAAF Base Amberly and other recent Defence projects.[14]

Master planning considerations

3.28 The current Master Plan provides a structure that generally defines the working accommodation precincts to be located north of Robert Towns Boulevard, with the industrial facilities separated in a precinct to the east and the Training Precinct to the west. The area to the south of Robert Towns Boulevard is primarily for living-in accommodation, messing and open space. A copy of the Precinct Master Plan is located at Annex B.[15]

3.29 The siting of the proposed facilities accords with the Lavarack Barracks Strategic Master Plan prepared in 1998, to be amended to show the decision to locate the 3rd Combat Engineer Regiment closer to the combat centre of the Barracks. This amendment is reflected in the Precinct Master Plan at Annex B.[16]

Design standards

3.30 The design of the new facilities will conform to the relevant sections of the Building Code of Australia, Australian Standards, State Regulations and Defence Specifications.[17]

Design philosophy

3.31 The Defence submission outlined the general design philosophy to be adopted for the proposed facilities. It incorporates the following considerations:

14 Defence, Submission, p.13.

15 See Maps 2-3.

16 Defence Submission, p.30; See Maps 2-3.

17 Defence, Submission, p.27.

- promotion of energy efficient design suitable for the rigours of the climate and cyclonic conditions;
- adoption where possible of conventional construction techniques and materials, in particular those commonly used by the construction industry in tropical North Queensland;
- utilisation of durable materials suitable for a saline tropical environment that combine long life with minimum maintenance;
- allowance to maximise natural cross-flow ventilation in all buildings not to be air conditioned;
- develop Melton Black Drive as the focus of the 3rd Brigade area; and
- impact of aircraft and vehicle noise on the working environment, and the occupational health and safety of occupants.[18]

Philosophy adopted for the design of the fire protection systems

3.32 The Defence submission set out the following philosophy which has been adopted in respect of the design of the fire protection systems:

- all construction and fire protection requirements will, as a minimum, be in accordance with the provisions of the Building Code of Australia, the Defence Manual of Fire Protection Engineering and other applicable Codes and Standards;
- Defence will require certification that the design and construction meet the requirements of the relevant Codes and Standards and appropriate State, Local Government and Defence requirements; and
- the Queensland Fire and Rescue Service will be invited to comment on the project, visit the site and offer comment.[19]

Philosophy adopted for energy management and lighting

3.33 The Defence submission stated that the design for all power supply, electrical and mechanical equipment will include an assessment of energy use applying life cycle costing methodology and power demand analysis. Facilities will incorporate building management systems, metering and

18 Defence, Submission, pp.27-28.

19 Defence, Submission, p.28.

other provisions to measure and monitor energy use and to allow regular energy audits.

3.34 To reduce energy consumption and consequential greenhouse gas emissions, lighting is to be controlled, where possible, by photoelectric switches in conjunction with time-switch schedules. This is to include provision of personnel sensor controlled lighting to intermittently occupied areas. Lamps are to be high efficiency fluorescent, compact fluorescent or discharge type. External lighting is to be designed to minimise glare and colour distortion. The air-conditioned areas will be controlled by the Building Management System and include time switches where appropriate to reduce running costs.[20]

Philosophy adopted for precautions against legionella

3.35 Defence submitted that the air-conditioning systems are required to be air cooled, so no specific precautions against the legionella bacillus are considered necessary.[21]

Completion Dates

3.36 Defence representatives advised that, given that Stage 2 will be completed in September 2001, ahead of schedule, they are confident that using the same estimates Stage 3 will be completed on time:[22]

> It is a matter of spending a lot of effort up front, agreeing a concept with the users, locking that concept in and then developing the detail so that we can move into construction in a very efficient manner.[23]

3.37 Mr Frame, Project Manager, Thiess assured the Committee that his organisation has extensive knowledge about construction in northern Australia and has therefore allowed a contingency for lost time due to wet weather, which ranges between 20 and 30 working days per annum.[24]

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20 Defence, Submission, pp.28-29.

21 Defence, Submission, p.29.

22 Brigadier Garry Kelly, Mr Murray Frame, Evidence, p.13-14.

23 Brigadier Garry Kelly, Evidence. p.14.

24 Mr Murray Frame, Evidence, p.13.