



Parliamentary Standing Committee on Public Works

REPORT

relating to the proposed

RAAF BASE PEARCE REDEVELOPMENT STAGE 1, PEARCE WESTERN AUSTRALIA

(Eighth Report of 2007)

THE PARLIAMENT OF THE COMMONWEALTH OF AUSTRALIA
2007

The Parliament of the Commonwealth of Australia

RAAF Base Pearce Redevelopment Stage 1, Pearce, Western Australia

Parliamentary Standing Committee on Public Works

August 2007
Canberra

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ISBN 978-0-642-78976-1 (printed version)

ISBN 978-0-642-78977-8 (HTML version)



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Membership of the Committee

Chair Hon Judi Moylan MP

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Members Mr John Forrest MP

Senator Annette Hurley

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List of abbreviations

ADF	Australian Defence Force
AGO	Australian Greenhouse Office
AQIS	Australian Quarantine Inspection Service
BCA	Building Code of Australia
Defence	Department of Defence
DEWR	Department of Environment and Water Resources
DRN	Defence Restricted Network
GST	Goods and Services Tax
LIA	Living-in Accommodation
OH&S	Occupational Health and Safety
PPE	Personal Protection Equipment
RAN	Royal Australian Navy
The Act	<i>Public Works Committee Act 1969</i>
WA	Western Australia



Extract from the Votes and Proceedings of the House of Representatives

No. 179 dated Thursday 31 May 2007

PUBLIC WORKS—PARLIAMENTARY STANDING COMMITTEE—REFERENCE
OF WORK—RAAF BASE PEARCE REDEVELOPMENT STAGE 1, PEARCE, WA

Mr Lindsay (Parliamentary Secretary to the Minister for Defence), 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: RAAF Base Pearce redevelopment stage 1, Pearce, WA.

Question—put and passed.



List of recommendations

Issues and Conclusions

Recommendation 1

The Committee recommends that in due course the Department of Defence provide details of heritage buildings demolished and referred for archiving to the Department of Environment and Water Resources.

Recommendation 2

The Committee recommends that Defence provide advice to satisfy the Committee that everything is being done to capture and use water on RAAF Base Pearce in view of community concerns related to water availability.

Recommendation 3

The Committee recommends that Defence continue to pursue consultations with appropriate local, State and Federal government agencies particularly on the delivery of water to the site, having regard to local community interests, and that it consult with the local fire authority on appropriate fire regulations that might need to be incorporated into the design of the works.

Recommendation 4

The Committee recommends that RAAF Base Pearce Redevelopment Stage 1 proceeds at an estimated out-turn cost of \$142.2 million.

Introduction

Referral of Work

- 1.1 On 31 May 2007 the proposal for RAAF Base Pearce Redevelopment Stage 1, Pearce, Western Australia (WA) was referred to the Public Works Committee for consideration and report to the Parliament in accordance with the provisions of the *Public Works Committee Act 1969* (the Act).¹ The proponent agency for this work is the Department of Defence (Defence).
- 1.2 The Hon Peter Lindsay MP, Parliamentary Secretary to the Minister for Defence, advised the House that the estimated out-turn cost of the proposal is \$142.2 million, plus GST. Subject to parliamentary approval, further design and construction will commence in late 2007 with expected completion by mid-2011.²

1 Extract from the *Votes and Proceedings of the House of Representatives*, No. 179, 31 May 2007.

2 *ibid.*

Background

RAAF Base Pearce

- 1.3 RAAF Base Pearce is essential to the Air Force capability as it is a flying training Base for the RAAF and Royal Australian Navy (RAN) cadet pilots. RAAF Base Pearce houses two flying training units;
- Number 2 Flying Training School, which provides pilot training with 41 Pilatus PC 9/A aircraft; and
 - Number 79 Squadron, which conducts jet-training courses with 14 Hawk 127 aircraft.
- 1.4 Since 1993, RAAF Base Pearce has also been a flying training base for pilots of the Republic of Singapore Air Force.³
- 1.5 Further, RAAF Base Pearce is the only fully manned military airbase in WA, and is thus of high strategic and operational importance. The Base has operated as an airhead in support of Australian Defence Force (ADF) operations in the Middle East as well as provided support for search-and-rescue and fisheries patrols in the Indian and Southern Oceans. The Base also provides facilities and services to RAN units during major exercises in the Western Australia Exercise Area.⁴

Location of Site

- 1.6 RAAF Base Pearce is located adjacent to the town of Bullsbrook and is in the electorate of Pearce in WA.⁵ The proposed works are contained within the existing boundary of RAAF Base Pearce and observe the RAAF Base Pearce Master Plan.⁶

Inquiry Process

- 1.7 The Committee is required by the Act to consider public works over \$15 million⁷ and report to Parliament on:

3 Appendix C, Submission No. 1, paragraphs 2 – 3.

4 *ibid.*, paragraph 4.

5 *ibid.*, paragraph 39.

6 *ibid.*, paragraph 54.

7 *Public Works Committee Act 1969*, Part III, Section 18 (8).

- the purpose of the work and its suitability for that purpose;
- the need for, or the advisability of, carrying out the work;
- whether the money to be expended on the work is being spent in the most cost effective manner;
- the amount of revenue the work will generate for the Commonwealth, if that is its purpose; and
- the present and prospective public value of the work.⁸

1.8 The Committee called for submissions by advertising the inquiry in *The Australian* on Saturday, 9 June 2007. The Committee also sought submissions from relevant government agencies, local government, private organisations and individuals, who may be materially affected by or have an interest in the proposed work. The Committee subsequently placed submissions and other information relating to the inquiry on its web site in order to encourage further public participation.

Inspection and Hearing

1.9 On Thursday, 19 July 2007, the Committee inspected the site and environs of the proposed works. A confidential briefing from officers of the Department of Defence and a public hearing were held at RAAF Base Pearce, WA, later that day.⁹

⁸ *ibid*, Section 17.

⁹ See Appendix D for the official Hansard transcript of the evidence taken by the Committee at the public hearing on Thursday, 19 July 2007 at RAAF Base Pearce, WA.

The Proposed Works

Purpose

- 2.1 The proposed RAAF Base Pearce Redevelopment Stage 1 aims to address critical aged infrastructure and facilities, focussing on those related to pilot training.¹
- 2.2 This project is the first redevelopment planned for RAAF Base Pearce and will:
- ensure continued and efficient operation of pilot training programs;
 - resolve Base operational issues arising from ageing infrastructure;
 - resolve Building Code of Australia (BCA) compliance and associated occupational health and safety issues;
 - reduce operational costs by rationalisation and consolidation of duplicate and out-of-date facilities;
 - provide a combined mess reflecting an organisation which values those who make Defence a career choice;

¹ Appendix C, Submission No. 1, paragraph 6.

- provide living-in accommodation(LIA) that is a major contributor to Defence capability by enabling personnel mobility, morale, esprit de corps, training outcomes, attraction and retention;
- improve the environment and preserve the heritage of the Base; and
- enhance facilities to ensure continued capability to support deployment operations.²

Need

2.3 In its submission to the Committee, Defence states that,

The proposed redevelopment aims to address the RAAF Base Pearce ageing, sub-standard, non-compliant and dysfunctional infrastructure and facilities through a combination of new construction and refurbishment works.³

2.4 Defence submitted that the need for the works are as follows:

- **Engineering Services:** the age of some of the engineering services at RAAF Base Pearce is 40-50 years, and an assessment report indicates that more than 80% of the water and sewerage engineering services are in poor condition and need to be replaced. The Base also experiences frequent outages which has an impact on Base operations.
- **Fuel Farm:** the existing Fuel Farm is aged, non-compliant and has potential environment ground contamination issues.
- **Fuel Farm Quality Control Centre:** the existing Fuel Quality Control Centre is dysfunctional and has deficiencies in regards to Occupational Health and Safety (OH&S) and Australian Standards.
- **Combined Mess:** RAAF Base Pearce's existing four separate messes are generally in poor condition due to age and are in need of refurbishment or major repair. The kitchens do not meet contemporary food health and hygiene requirements.
- **Air Movements Facility:** the current size, layout and functionality of the Air Movements Facility is inadequate for multiple deployments and increased air movements.

2 *ibid.*, paragraph 7.

3 *ibid.*, paragraph 1.

- **PC 9 Maintenance Facility:** the condition of the existing maintenance facility for Pilatus PC-9/A aircraft, constructed in 1937, has deteriorated and has numerous BCA , OH&S, and Defence Manual of Fire Protection compliance issues.
- **Noise Attenuated Engine Run-up Facility:** RAAF Base Pearce has no purpose built engine run-up facility that meets OH&S regulations and noise pollution requirements for the engine run-up procedures of the resident BAe Hawk 127 aircraft.
- **Defence Restricted Network Connection:** the former Base Cinema, being adaptively utilised as the Base Briefing facility, is constrained in terms of visual presentations for briefings due to the absence of a Defence Restricted Network (DRN) connection.
- **Living-in Accommodation:** the general standard of the existing LIA facilities at RAAF Base Pearce is poor, does not comply with contemporary BCA requirements and does not meet the required Defence standards for living-in accommodation.
- **Demolition of Redundant Facilities:** as a result of the proposed redevelopment, a number of facilities will become redundant and are planned to be demolished to minimise ongoing costs and to allow space for future redevelopments.⁴

Scope

2.5 Defence submitted that the RAAF Base Pearce Redevelopment Stage 1 project will involve:

- **Engineering Services:** upgrade and replacement of the ageing Base-wide engineering services (water, sewer, stormwater, irrigation, power and communications) to comply with Australian Standards, State and local codes and guidelines;
- **Fuel Farm:** construction of a new Base Fuel Farm to replace the current substandard facility;
- **Fuel Farm Quality Control Centre:** construction of a new Fuel Quality Control Centre to replace the current non-compliant facility;

⁴ *ibid.*, paragraphs 8-17.

- **Combined Mess:** construction of a new combined mess to meet the needs of all personnel on Base, replacing four substandard individual messes and thereby reducing operating costs;
- **Air Movements Facility:** upgrade/replace the Air Movements terminal and restore air cargo hangar facilities;
- **PC 9 Maintenance Facility:** upgrade of the PC9/A maintenance facilities to ensure compliance with the Building Code of Australia, Occupational Health and Safety regulations and Defence Manual of Fire Protection Engineering and to achieve functional effectiveness;
- **Noise Attenuated Engine Run-up Facility:** construction of a new noise attenuated Engine Run-Up Facility to provide noise protection for personnel and to reduce noise emissions outside the Base;
- **Defence Restricted Network Connection:** installation of a Defence Restricted Network connection to the Base Briefing facility to enhance its adaptive reuse as the Base Briefing facility;
- **Living-in Accommodation:** construction of 128 new LIA rooms for Cadet Pilots to replace the current sub-standard facilities; and
- **Demolition:** demolition of derelict and redundant facilities.⁵

2.6 A detailed description of the works can be found at Appendix C, paragraphs 41 to 52 of Defence's main submission.

Project Delivery

2.7 Defence proposes to deliver the project through a Managing Contractor system which it states is well suited to projects where there will be a significant number of individual works being executed over a large area. The Managing Contractor has the ability to control and coordinate concurrent design and construction of disparate works and maintain a schedule which relies upon a tight sequence of events.⁶

2.8 Subject to parliamentary approval of the project, further design, tendering and then construction is scheduled to commence in late 2007, with completion by mid 2011. Construction will be staged to minimise disruption to Base operations.⁷

5 *ibid.*, paragraph 18.

6 *ibid.*, paragraph 86.

7 *ibid.*, paragraph 88.

Cost

- 2.9 The works are estimated to cost \$142.2 million, this is based on construction occurring between 2007 and 2011. This figure includes:
- all planning, management and design fees;
 - construction costs;
 - furniture;
 - fit-outs;
 - equipment; and
 - contingencies.⁸
- 2.10 Defence estimates that the operating costs savings as a result of the Stage 1 Redevelopment works will be approximately \$0.5 million annually. These savings are the result of the rationalisation of the LIA and messing facilities on Base, which will result in savings from the contracting costs for cleaning, catering and facility maintenance.⁹

⁸ *ibid.*, paragraph 84.

⁹ *ibid.*, paragraph 85.

Issues and Conclusions

Need

- 3.1 According to Defences' submission to the Committee the need for this project arises predominantly from the need to replace and refurbish a number of facilities at RAAF Base Pearce that are ageing, substandard, and do not comply with current building standards.¹
- 3.2 In addition a number of new facilities will be provided that will assimilate new technologies, including aircraft types, so as to ensure that the base is able to support future operations.
- 3.3 During the course of the site inspection, the Committee assessed the standards of those facilities that are the subject of either refurbishment or demolition, and agreed that the description applied to them by Defence was reflected in the state of the facilities.
- 3.4 A case in point was the proposal to construct a new base fuel farm in order to replace the current non-compliant facility. Defence informed the Committee that the existing fuel farm had been built at a time when codes and building standards were not as stringent as they are today. While the

¹ Appendix C, Submission No. 1, paragraph 1.

department had no issue with the integrity of the current facility, the fuel tanks did not meet the current Australian standards that were formulated to eliminate the great majority of potential risks. Against this background, Defence was of the view that it was incumbent on the department to ensure the integrity of fuel storage facilities through the provision of a new fuel farm that would meet these standards.²

- 3.5 During the site inspection, Defence explained that the proposed new fuel farm would be relocated to a site located away from the flight path and the former fuel storage site remediated, including the removal of soil contamination and re-grassing.

Heritage Issues

- 3.6 Leading on from the matter of need, the Committee inquired as to the criteria employed by Defence in reaching a decision as to whether to retain a building or deciding to demolish it. Defence responded that decisions as to whether to retain or demolish a building were based on the department's heritage assessors who provide a report as to the heritage value of each of the buildings.

- 3.7 Defence explained during the course of the confidential hearing that:

The base cinema was built in the early thirties. The transit rooms were an accommodation building built in the early thirties and are evident in Air Force bases all over Australia, whereas the cinema or something like that might not be. Our experts and our consultants looked at the function and whether there are others existing ... elsewhere on the base or on other defence land. Then an assessment was made of whether these were of high, medium or low significance.

- 3.8 Defence also stated that following on from the Committee's recommendations associated with works proposed for Lavarack Redevelopment Stage 4, the department had written to the Department of Environment and Water Resources (DEWR) seeking guidance on the Defence management plan for RAAF Base Pearce.³ The outcome of this process was that DEWR had undertaken an assessment of buildings to be demolished against the Commonwealth Heritage List criteria but indicated

2 Appendix D, Official Transcript of Evidence, page 6

3 Parliamentary Standing Committee on Public Works, Fourth Report of 2007, *Lavarack Barracks Redevelopment Stage 4*, Townsville, Queensland, Recommendation 9, page 22.

that Defence would need to ensure that buildings scheduled for demolition be recorded and passed to DEWR for archiving.

Recommendation 1

The Committee recommends that in due course the Department of Defence provide details of heritage buildings demolished and referred for archiving to the Department of Environment and Water Resources.

The Tender Process

- 3.9 Defence has stated that the delivery of the works will be via a managing contractor with responsibility to control and coordinate concurrent design and construction of the various elements of the project, and maintain a schedule to this end.⁴ A project manager will also be appointed to act as the contract administrator to the managing contractor for the delivery phase of the project.⁵
- 3.10 The Committee inquired as to the processes Defence had followed with regard to the tendering processes for these two appointments.
- 3.11 In responding, Defence informed the Committee that Sinclair Knight Mertz was selected as the project manager/contract administrator and John Holland as the managing contractor for the development phase of the contract. For the procurement of the managing contractor, Defence employed a two-stage open tender process from which three nationally based companies were short-listed for the second stage of the tender process. According to Defence:
- All three companies submitted a tender for the work and John Holland was selected as the best value for money for the Commonwealth for the development of the project.⁶
- 3.12 In further elaboration, the department informed the Committee that an average of costs had been prepared, and all of the tenders came within the range of that average.⁷

4 Appendix C, paragraph 86.

5 *ibid.*, paragraph 87.

6 Appendix D, page 4.

7 *ibid.*, page 5.

- 3.13 The department also stated that independent of cost, the technical merit of tenders were assessed adding another tier to the selection of tenderers reinforcing the best value for money to the Commonwealth.⁸

The Noise Attenuated Engine Run-up Facility

- 3.14 In its Statement of Evidence, Defence states that it proposes to provide a new purpose built engine run up facility that meets OH&S regulations and noise pollution requirements. The engine run up procedures are required to be performed as part of aircraft maintenance checks and adjustments.⁹
- 3.15 At the Hearing, the Committee sought further details of this facility, particularly as to how the new proposed facility would improve the present situation.¹⁰
- 3.16 The department informed the Committee that RAAF Base Pearce has a requirement to conduct testing of aircraft engines after maintenance. Currently this testing is conducted on an open concrete slab located in proximity to the base boundary. According to Defence the engine testing process involves OH&S issues requiring maintenance staff to wear personal protection equipment (PPE) as protection against noise damage.¹¹
- 3.17 The proposed new facility includes a purpose built building that will considerably reduce noise pollution. In addition to PPE to minimise noise levels for maintenance personnel, a sound attenuator protection booth will be included as part of the development to further reduce exposure to noise levels. The new facility will reduce noise levels both on site as well as reducing noise emissions from the base to adjacent properties.¹²
- 3.18 The Committee asked the department whether it had an indication of the known percentage reduction or an approximation of a percentage reduction in sound emissions.
- 3.19 The Committee was informed that a noise modelling report was undertaken in December 2006, with a further field study undertaken in May 2007. The results of both the report and the field study demonstrated that noise levels were in excess of the Western Australian Environmental Protection Authority guidelines. These outcomes were used in the design

8 loc.cit.

9 Appendix C, paragraph 14.

10 Appendix D, page 3.

11 loc.cit.

12 *ibid.*, page 4.

of the new facility with the objective of achieving a reduction in noise emissions by 24 decibels to make it compliant with Western Australian regulations.¹³

Air Movements Terminal

3.20 The department proposes to upgrade the air movements terminal by providing new office facilities and staff amenities, and new passenger facilities. A proposed extension to the building will remove administrative and passenger functions from the existing cargo hanger, returning it to its intended function.¹⁴

3.21 The Committee sought additional information regarding passenger movements during peak load times. In responding Defence stated that the proposed works would allow for future operations that accompany new aircraft types and the potential increase in passenger numbers arriving and departing from the facility. According to Defence:

Flights coming in are not necessarily limited to single aircraft movements at one time. We have the capacity in that area to put at least three C130s in close proximity to each otherSo certainly the capacity would be in the area of several hundred people at any one time.¹⁵

3.22 The Committee inquired as to the nature of arrangements regarding an Australian Quarantine Inspection Service (AQIS) and Customs presence to process incoming personnel from overseas. The current arrangement as explained by Defence was to contact these agencies in advance of arrivals of personnel from overseas who then attend on an 'as required basis'.¹⁶

Water and Energy

3.23 Under the heading 'Energy Conservation Measures and Ecologically Sustainable Design' in its submission, Defence mentions at paragraph 64 (g) that it proposes to install waterless urinals and water efficient fixtures.

13 *ibid.*, page 7.

14 Appendix C, Submission No. 1, paragraph 47.

15 Appendix D, Official Transcript of Evidence, page 5.

16 *loc.cit.*

There is no other reference to water conservation and other issues of water sustainability on the base.

- 3.24 The Committee sought an expanded explanation from Defence as to (a) current issues affecting the delivery of water to RAAF Base Pearce, and (b) what consideration had been given to water storage for fire fighting and irrigation, noting that this was currently sourced from the potable water supply.¹⁷

Water Infrastructure Issues

- 3.25 In regards to the delivery of water to RAAF Base Pearce, Defence informed the Committee that water is delivered by way of an aquifer located approximately 3.5 kilometres from the base from where it is pumped to a main water storage tank on the estate. From there, it is gravity fed to potable water tanks located at various sites throughout the base.¹⁸

- 3.26 The department commented that it has significant concerns over the age of the current system, now some 70 years old. Defence indicated to the Committee that the water supply to the base was compromised due to a number of problems that include:

- no filtration system for potable water;
- the existing water main being made up of a mix of cement lined cast iron pipe from the thirties, asbestos pipe and PVC pipe;
- untreated water contamination of the potable water system; and
- chlorination levels not being maintained to a level that would meet the Australian Drinking Water guidelines, leading to the supply being shut-down in early 2007.¹⁹

- 3.27 In response to the problems currently being experienced, Defence advised the Committee that:

Due to the current water quality concerns, the base has stopped personnel drinking water from the base's potable water supply.²⁰

- 3.28 As a result of the closure of the system, Defence 'fast tracked negotiations' with the Western Australia Water Corporation to provide a potable water supply from their system to the Chittering Road tanks and a 50mm supply

17 *ibid.*, pages 7 and 9.

18 *ibid.*, page 7.

19 *ibid.*, page 8.

20 *loc.cit.*

line to Pearce to provide a separate potable water supply. This is currently under investigation by the Water Corporation to determine the scope of works required to return the base supply to potable water quality. However, according to Defence, it will not be possible to return the supply to a standard that complies with the Australian Drinking Water Guidelines until the current redevelopment proposal has been completed and all potable water mains on the base have been replaced.²¹

- 3.29 With specific reference to the matter of irrigation and fire fighting water, Defence explained that as part of the redevelopment, water delivery will be split between potable water and non-potable water that will be used for irrigation. In addition captured rainwater from roof structures will be used for toilet flushing in LIA.²²
- 3.30 The issue of water was also raised by Mr David Lombardo, Vice-President of the Bullsbrook and Chittering Chamber of Commerce. In evidence before the Committee, Mr Lombardo, noting the possibility of RAAF Base Pearce being connected to the Bullsbrook town water supply, requested that in negotiations with the Western Australia Water Corporation the Chamber and local government also be involved.²³
- 3.31 In responding the Committee made note that the issue of water and its implications for other critical infrastructure development was of concern along the Great Northern Highway corridor, and asked whether the Chamber had any suggestions as to how the current water shortage might be addressed.²⁴
- 3.32 In responding, the Chamber explained that the Pearce area was at the most northern end of the Water Corporation infrastructure and that it had limitations in meeting the demand of local communities. The capacity to deliver water in sufficient quantity would be further impacted by the growth of Bullsbrook and the demands of the RAAF. The Chamber informed the Committee of the Water Corporation's preliminary plans that would involve a mains extension that would possibly alleviate the current situation, but in the meantime the supply of water should take into account the future demand of the township of Bullsbrook as well as those of Pearce.²⁵

21 loc.cit.

22 *ibid.*, page 11.

23 *ibid.*, page 13.

24 loc.cit.

25 *ibid.*, page 14.

Water Harvesting

- 3.33 The Committee was also interested in following-up the extent to which Defence had invested in rainwater harvesting from roof structures and the extent to which collected rainwater could be used at the base messing facility and other water requirements.²⁶
- 3.34 Defence responded that rainwater tanks would be used in delivering water to the mess as well as to LIA accommodation. This would take the form of cold water connections and toilet flushing. Defence also mentioned that appliances, including dishwashers, washing machines and other devices, would be selected on the basis of low water consumption. In the case of shower heads these would be AAA compliant. In addition, the extent of the irrigation network will be significantly reduced resulting in potential savings in water usage.²⁷
- 3.35 According to Defence, in 2006 the amount of potable water used on base for all purposes – irrigation, washing, drying, potable and non potable use - was of the order of 107 mega litres, or about 1½ days use for Canberra.²⁸
- 3.36 However Defence could not provide an estimate of the potential water usage following the completion of the redevelopment works, although the department did suggest that it would decrease once the water infrastructure and irrigation systems had been redeveloped. Defence accepted that there is significant water wastage due to systems failures and the need for system flushing being required each time the water main fails.²⁹
- 3.37 The department informed the Committee that it had commissioned an Environmental Sustainable Development Report to assess what measures should be implemented to reduce water use so as to meet government policy. The Committee indicated that it would be useful if Defence could provide documentation on the total extent of initiatives proposed to improve water efficiency.³⁰

26 *ibid.*, page 10.

27 *ibid.*, page 11.

28 *loc.cit.*

29 *loc.cit.*

30 *loc.cit.*

Recommendation 2

The Committee recommends that Defence provide advice to satisfy the Committee that everything is being done to capture and use water on RAAF Base Pearce in view of community concerns related to water availability.

Energy

3.38 The Committee congratulated Defence in addressing energy conservation issues, noting the department's comment at paragraph 63 of its main submission that:

Defence reports annually to Parliament on its energy management performance and on its progress in meeting the energy efficiency targets established by Government as part of its commitment to improve Ecologically Sustainable Development.

3.39 In the context of the current project, Defence informed the Committee that the department had discussed water and energy efficiency measures with the Australian Greenhouse Office (AGO). It stated that all appliances and lighting would reflect the guidelines of the AGO applicable to energy and water use.³¹

Consultations

3.40 The department states in its Statement of Evidence that:

Discussions have been held or will be held with the Federal Member for Pearce, Local Members of the City of Swan and the Chittering Chamber of Commerce, the Western Australian Water Corporation, the Department of Environment and Water Resources, and the Department of Conservation and Land Management, Western Australia.³²

3.41 That noted, there was no evidence available from Defence on the scope of the consultations that had either occurred or were mooted. From evidence presented to the Committee by the Bullsbrook and Chittering Chamber of Commerce, the Committee is aware of local concerns, particularly regarding delivery of water through the Western Australian

31 *ibid.*, page 10.

32 Appendix C, paragraph 37.

Water Corporation infrastructure, and the pressures on the availability of water to the local community.

- 3.42 The Committee notes that there does not appear to be any consultations scheduled to take place with the local fire authority, particularly as regards any design works that might be required in the event of an incident requiring the participation of local brigades.
- 3.43 It would assist the Committee if the department would furnish it with advice as to the progress on the consultative process, with particular reference to any aspects that have a bearing on the final design works associated with the redevelopment of the base.

Recommendation 3

The Committee recommends that Defence continue to pursue consultations with appropriate local, State and Federal government agencies particularly on the delivery of water to the site, having regard to local community interests, and that it consult with the local fire authority on appropriate fire regulations that might need to be incorporated into the design of the works.

Project Costs

- 3.44 The department's Statement of Evidence puts the estimated out-turn cost for this project at \$142.2 million including:
- all planning, management and design fees;
 - construction costs;
 - furniture and fit-out; and
 - equipment and contingencies.
- 3.45 Construction is scheduled to commence in 2007 with a completion by 2011.³³

33 *ibid.*, paragraph 84.

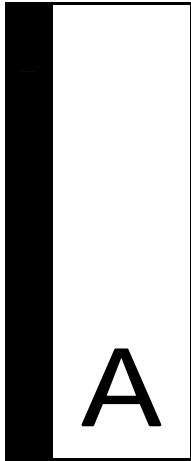
Recommendation 4

The Committee recommends that RAAF Base Pearce Redevelopment Stage 1 proceeds at an estimated out-turn cost of \$142.2 million.

The Hon Judi Moylan, MP

Chair

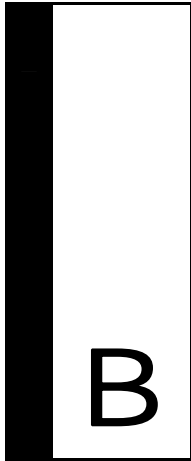
9 August 2007



Appendix A – List of Submissions and Exhibits

Submissions

1. Department of Defence
2. Bullsbrook and Chittering Chamber of Commerce Inc.
3. Department of Defence (Supplementary submission)
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Appendix B – List of Witnesses

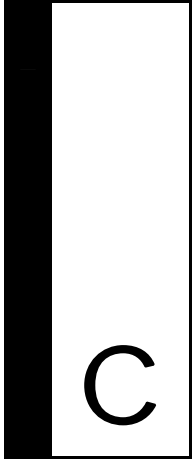
Brigadier William Grice, Director General, Infrastructure Asset Development,
Department of Defence

Mr David Lombardo, Vice-President, Bullsbrook and Chittering Chamber of
Commerce Inc.

Mr Gino Martiniello, Project Director, Western Australia, Department of
Defence

Mr Ian Revie, Project Manager/Contract Administrator, Sinclair Knight Merz
Pty Ltd

Wing Commander Anthony Thorpe, Base Commander, RAAF Base Pearce,
WA



Appendix C – Submission No. 1 from the
Department of Defence



Australian Government

Department of Defence

**RAAF BASE PEARCE
REDEVELOPMENT STAGE 1
PEARCE, WESTERN AUSTRALIA**

**STATEMENT OF EVIDENCE
TO THE
PARLIAMENTARY JOINT STANDING COMMITTEE
ON PUBLIC WORKS**

**DEPARTMENT OF DEFENCE
CANBERRA, ACT**

April 2007

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PART A - IDENTIFICATION OF THE NEED

INTRODUCTION

1. This evidence to the Parliamentary Joint Standing Committee on Public Works presents a proposal for the Royal Australian Air Force (RAAF) Base Pearce Redevelopment Stage 1, Pearce, Western Australia. The proposed redevelopment aims to address the RAAF Base Pearce ageing, sub-standard, non-compliant and dysfunctional infrastructure and facilities through a combination of new construction and refurbishment works.

BACKGROUND

2. RAAF Base Pearce is crucial to the Air Force capability, being the flying training Base for the RAAF and Royal Australian Navy cadet pilots. It houses primarily two RAAF flying training units, which are as follows:

- a) Number 2 Flying Training School, which provides pilot training with 41 Pilatus PC-9/A aircraft; and
- b) Number 79 Squadron, which conducts jet-training courses with 14 Hawk 127 aircraft.

3. Since 1993, RAAF Base Pearce has also been the flying training base for pilots of the Republic of Singapore Air Force.

4. RAAF Base Pearce is the only fully manned military air base in Western Australia and is of high strategic and operational importance. The Base supports deployments and transit operations for aircraft of the Surveillance and Response Group, Air Combat Group and foreign military forces. The Base has also operated as an airhead in support of Australian Defence Force operations in the Middle East. It also acts as a support Base for the Special Air Services Regiment activities and deployments, and for search-and-rescue and fisheries patrols in the Indian and Southern Oceans. The Base also provides facilities and services to Royal Australian Navy units during major exercises in the Western Australia Exercise Area.

5. From a facilities and infrastructure perspective, the history of RAAF Base Pearce is broadly defined by six main development periods:

- a) the original base development in 1936–8;
- b) the expansion of permanent and temporary facilities during World War II;
- c) realignment and sealing of the runways and aircraft movement areas around 1954;

- d) additional facilities and infrastructure stemming from the formation of the former Number 1 Advanced Flying Training School Pearce (now Number 2 Flying Training School) in 1959;
 - e) development of the 130 Squadron Republic of Singapore Air Force facilities in 1994; and
 - f) minor facilities development as part of the Hawk 127 Lead-in-Fighter Project in 1998–1999.
6. The proposed redevelopment stage 1 aims to address critical aged infrastructure and facilities, with focus on facilities related to pilot training.

OBJECTIVES

7. This is the first redevelopment planned for RAAF Base Pearce, which will:
- a) ensure continued and efficient operation of pilot training programs;
 - b) resolve Base operational issues arising from ageing infrastructure;
 - c) resolve Building Code of Australia compliance and associated occupational health and safety issues;
 - d) reduce operational costs by rationalisation and consolidation of duplicate and out of date facilities;
 - e) provide a combined mess reflecting an organisation which values those who make Defence a career choice;
 - f) provide living-in accommodation that is a major contributor to Defence capability by enabling personnel mobility, morale, esprit de corps, training outcomes, attraction and retention;
 - g) improve the environment and preserve the heritage of the Base; and
 - h) enhance facilities to ensure continued capability to support deployment operations.

NEED FOR WORK

8. **Engineering Services.** The age of some of the engineering services at RAAF Base Pearce is 40-50 years and an assessment report indicates that more than 80% of the water and sewerage engineering services are in poor condition and need to be replaced. The existing engineering services continue to suffer frequent outages which not only inconveniences users but more importantly have an impact on the Base operations. These impacts could, in certain circumstances, render some facilities inoperable. Currently, reactive repair and maintenance is an ongoing and regular occurrence. This level of maintenance will increase with time as

further demands are made on the existing infrastructure, unless significant upgrades are undertaken.

9. **Fuel Farm.** The fuel farm is an important asset at RAAF Base Pearce as it is crucial to flying training and operations. The existing fuel farm is aged, non-compliant and has potential environment ground contamination issues. The Department of Defence, after detailed analysis, determined that it is not economical to refurbish the old fuel farm and hence the requirement for a new fuel farm.

10. **Fuel Farm Quality Control Centre.** The existing fuel quality control centre is dysfunctional and has deficiencies in regards to Occupational Health and Safety and Australian Standards. This facility needs to be co-located with the fuel farm and hence the need to construct a new compliant fuel farm quality control centre next to the proposed new fuel farm.

11. **Combined Mess.** RAAF Base Pearce is currently serviced by four separate messes comprising five kitchens, four dining rooms and three bars to cater separately for Officers, Senior Non-Commissioned Officers, Airmen, Cadet Pilots and In-flight Meal preparation. The messes are generally in poor condition due to age and are in need of refurbishment or major repair. The kitchens do not meet contemporary food health and hygiene requirements. Additionally, the provision of four separate messes is inefficient and costly in terms of maintenance, energy use, catering equipment and personnel and cleaning costs. Therefore, the need for a new combined mess that is compliant and efficient.

12. **Air Movements Facility.** The current size, layout and functionality of the Air Movements facility is inadequate for multiple deployments and increased air movements. The existing office facilities for 1 Air Terminal Squadron Detachment, Pearce are based on 'demountable' extensions to the main cargo handling hangar, which provides no visibility to the aircraft parking aprons and also overcrowds the cargo handling hangar. The flight planning area is inadequate for multiple deployments and there are no change rooms or shower facilities in the building or within close proximity. Refurbishment and extension of the existing facilities is required to meet the operational and personnel support requirements.

13. **PC 9 Maintenance Facility.** The condition of the existing maintenance facility for Pilatus PC-9/A aircraft, constructed in 1937, has deteriorated and has numerous Building Code of Australia, Occupational Health and Safety, Defence Manual of Fire Protection compliance issues. Also, the office facility is dysfunctional in its existing layout. These

facilities are mandated for use by a Defence Contractor (for maintenance of PC9s) and as such Defence has a duty of care to ensure these facilities comply with relevant Building Code of Australia and Occupational Health and Safety requirements. Therefore, the need to refurbish this facility to achieve legislative compliance and efficient layout.

14. **Noise Attenuated Engine Run-up Facility.** RAAF Base Pearce currently has no purpose built engine run up facility that meets the Occupational Health and Safety regulations and noise pollution requirements for the engine run up procedures of the resident BAe Hawk 127 aircraft. The engine run up procedures are required to be performed as part of maintenance checks and adjustments. Therefore, the need to build a compliant, purpose built, noise attenuated engine run-up facility.

15. **Defence Restricted Network Connection.** The former Base Cinema, being adaptively utilised as the Base Briefing facility, is constrained in terms of visual presentations for briefings due to absence of a Defence Restricted Network (DRN) connection. The small investment in a DRN connection will enhance capability of the Base Briefing facility.

16. **Living-In-Accommodation.** The general standard of the existing living-in accommodation facilities at RAAF Base Pearce is poor, does not comply with contemporary Building Code of Australia requirements and does not meet the required Defence standards for living-in accommodation. The standard of the living-in-accommodation impacts the Australian Defence Force retention, morale and hence capability. The existing living-in-accommodation blocks cannot be economically refurbished to meet the required standards. Therefore, the need for new living-in-accommodation for Cadet Pilots, who are required to live-in as part of flying training.

17. **Demolitions.** As a result of this proposed redevelopment, a number of facilities at RAAF Base Pearce will become redundant. As these facilities are dilapidated and surplus, they are planned to be demolished to minimise ongoing maintenance costs, to allow space for future redevelopments and to generally improve the Base aesthetic appearance.

DESCRIPTION OF THE PROPOSAL

18. The RAAF Base Pearce Redevelopment Stage 1 project will involve:
- a) upgrade and replacement of the ageing Base-wide engineering services (water, sewer, stormwater, irrigation, power and communications) to comply with Australian Standards, State and local codes and guidelines;
 - b) construction of a new Base Fuel Farm to replace the current sub-standard facility;

- c) construction of a new Fuel Quality Control Centre to replace the current non-compliant facility;
- d) construction of a new combined mess to meet the needs of all personnel on Base, replacing four substandard individual messes and thereby reducing operating costs;
- e) upgrade/replace the Air Movements terminal and restore air cargo hangar facilities;
- f) upgrade of the PC9/A maintenance facilities to ensure compliance with Building Code of Australia, Occupational Health and Safety regulations and Defence Manual of Fire Protection Engineering and to achieve functional effectiveness;
- g) construction of a new noise attenuated Engine Run-Up Facility to provide noise protection for personnel and to reduce noise emissions outside of the Base;
- h) installation of a Defence Restricted Network connection to the Base Briefing facility to enhance its adaptive re-use as the Base Briefing facility;
- i) construction of 128 new Living-in Accommodation rooms for Cadet Pilots to replace the current sub-standard facilities; and
- j) demolition of derelict and redundant facilities.

OPTIONS CONSIDERED

19. Alternative options for the individual project elements were considered as part of the development of the Detailed Business Case for the project.

20. ***Engineering Services Upgrade*** – An alternative option to address the problems associated with the engineering services was to retain and maintain the existing infrastructure with minimum modifications required to service the proposed redevelopment. This involved replacing sections of the services infrastructure on an as-need basis at the end of their operating life. This option was discounted as staged replacement of the entire mains system did not offer good value for money and would not eliminate the ongoing issues with service failures and disruptions.

21. An option to connect to the Western Australia Water Corporation systems for the supply of potable and non-potable water, and disposal of waste water has been investigated during the development of the RAAF Base Pearce Redevelopment Stage 1 proposal. Management of the water supply and waste water disposal is not a core business of the Department of Defence and the results of preliminary investigations consider connection with the Western Australia Water Corporation a viable option in the future.

22. **Base Fuel Farm** – Consideration was given to upgrading the existing fuel farm but this option was discontinued due to a number of issues, including:

- a) upgrading did not provide a satisfactory solution to environmental risks as the upgrade was unable to provide spill containment directly under the existing tanks;
- b) retention of the existing fuel farm would obstruct the master planned future expansion of the aircraft parking area;
- c) upgrading the fuel farm would generate greater potential for disruption to aircraft refuelling capability during the construction phase; and
- d) whole of life costs will be higher compared to constructing a new facility, due to increased maintenance requirements.

23. **Fuel Quality Control Centre** – Alternatives were not considered for this project element. New construction was deemed the most viable solution to meet the user requirement to situate the Fuel Quality Control Centre with the new fuel farm. This ensures common activities are located together for improved efficiency. The Fuel Quality Control Centre is a critical component of the Fuel Farm operations.

24. **Combined Mess Facility** – An alternative option of retaining and refurbishing the four existing messes and servicing these from a single refurbished kitchen facility was considered. This option did not offer the logistical and cost saving advantages of a fully rationalised facility. Additional concerns regarding the ability to supply quality meals at the required hygiene standards from a remote kitchen, following a trial to this effect, supported the development of one new combined mess facility.

25. **Air Movements Facilities** – Refurbishment of the existing facilities was also considered. This option was discontinued on the basis that refurbishment of the dilapidated transportable buildings was neither feasible nor able to meet the spatial requirements of the user. Such an option did not provide a sustainable, value for money solution to meet the Air Movements terminal functional requirements. The delivery of expansion of Air Movements cargo hangar is being delivered under a separate project, the Heavy Air Lift C17 project.

26. **PC9/A Maintenance Facilities** – An option to undertake a partial upgrade of the PC9/A maintenance facilities has been investigated. A lesser upgrade was discontinued during the design development as cost estimates were up to 90% of the major upgrade/replacement

works. This partial upgrade did not resolve the functional and administrative objectives for this facility nor satisfy the objective of full Occupational Health and Safety compliance.

27. **Noise Attenuated Engine Run-Up Facility** – Alternative options were considered utilising the existing run-up pad, earth berm sound attenuation and provision of personnel weather and sound protection. Noise modelling during the design development concluded that the noise level at the perimeter fence would be of an unacceptable level hence all alternative options were discontinued with a noise attenuated facility required to manage noise pollution.

28. **Defence Restricted Network Communication Connection to the Base Briefing Facility** – Options were considered to undertake a substantial upgrade to the Base Cinema to improve its level of amenity for alternative use as a Base Briefing Facility. To provide a functional Base Briefing Facility the provision of Defence Restricted Network connection has been prioritised for delivery within the funding for Stage 1 Redevelopment.

29. **New Cadet Pilot's Living-In Accommodation** – The option for refurbishment of the existing sub-standard Cadet Pilot's living-in-accommodation was considered in the development of this proposal. The structural design of the existing buildings does not allow for economical upgrade to the required standard. The current layout of these buildings is an inefficient use of space within the living-in-accommodation precinct, thus prohibiting expansion. In addition, the existing living-in accommodation facilities are scattered and would not have allowed consolidation of the living-in-accommodation facilities with the combined mess in the master planned "domestic precinct". The delivery of accommodation for Officers, Senior Non-Commissioned Officers, Airmen and Airwomen is being delivered under a separate project, the Single Living Environment and Accommodation Precinct project.

30. **Demolitions.** Alternatives were not considered for this project element as this element simply involves demolition of facilities that become redundant as part of this redevelopment.

REASON FOR ADOPTING THE PROPOSAL

31. This proposal redevelopment, which uses a mix of new construction and refurbishment works, will address critical aged dysfunctional infrastructure and facilities. It will ensure continued and efficient operation of pilot training programs and resolve Building Code of Australia compliance and associated occupational health and safety issues. It will further allow Defence to improve recruitment and retention through provision of modernised

combined mess and living-in-accommodation. The redevelopment strategy will also enhance the operational capability of the Base, reduce operational costs by rationalisation and consolidation of duplicate and out of date facilities and improve the environment of the Base.

ENVIRONMENTAL AND HERITAGE CONSIDERATIONS

32. Defence has carefully planned the siting of the works to avoid significant impacts on the sensitive environment areas of RAAF Base Pearce. The Initial Environmental Review and the Environmental Impact Assessment conducted for RAAF Base Pearce Redevelopment Stage 1 have indicated that there will be no significant impact on flora and fauna at RAAF Base Pearce. Therefore, it is considered that a referral to the Department of the Environment and Water Resources under the *Environmental Protection and Biodiversity Conservation Act, 1999* is not required.

33. The proposed redevelopment works will enhance the environment at RAAF Base Pearce through addressing potential ground contamination issues by the provision of new sewerage mains and remediation of the old fuel farm site. The provision of a noise attenuated facility will improve the environment for the local community and Base personnel.

34. Defence has developed preliminary environment management plans and the Managing Contractor will be required to develop Construction Environmental Management Plans covering all proposed works.

35. None of the sites at RAAF Base Pearce have been listed on the Commonwealth Heritage List. However, Defence has conducted a heritage assessment, which identifies a heritage precinct at the Base. This precinct focuses on the main development area stemming back to the original 1936-38 construction period. Within this precinct, a range of buildings and sub-precincts are categorised within varying levels of heritage significance, specifically, 'high', 'medium' and 'low'. The redevelopment will preserve high heritage buildings through adaptive re-use of buildings. A number of dilapidated redundant buildings of lesser heritage significance have been identified for demolition and architectural records will be captured before demolition. An Aboriginal heritage assessment of the Base determined the absence of any aboriginal heritage sites or artefacts.

36. Defence proposes to develop heritage themes in the messing and living-in accommodation heritage precinct through the selection of appropriate construction materials. The Initial Review and the Heritage Impact Assessment conducted for RAAF Base Pearce Redevelopment Stage 1 have indicated that there will be no significant impact on heritage at

RAAF Base Pearce. Therefore, it is considered that a referral to the Department of the Environment and Water Resources under the *Environmental Protection and Biodiversity Conservation Act, 1999* is not required.

CONSULTATIONS

37. Discussions have been held, or are planned to be held, with the Federal Member for Pearce, Local Members of the City of Swan and the Chittering Chamber of Commerce, the Western Australian Water Corporation, the Department of Environment and Water Resources (Australian Greenhouse Office) and the Department of Conservation and Land Management, Western Australia.

REVENUE

38. This proposal will not produce revenue.

PART B - TECHNICAL INFORMATION

PROJECT LOCATION

39. RAAF Base Pearce is located adjacent to the town of Bullsbrook and is in the electorate of Pearce in Western Australia, as shown at Annex A.

PROJECT SCOPE OF WORKS

40. A detailed description of the proposal for each project elements is provided in the following paragraphs. The location of the proposed works within RAAF Base Pearce is shown at Annex B.

Engineering Services Upgrade

41. Upgrade of the Base engineering services includes:
- a) replacement of sub-standard water supply and sewerage mains;
 - b) provision of a separate fire main to the key Base aircraft hangar facilities;
 - c) introduction of new and separate second-class water system for irrigation purposes;
 - d) upgrade of stormwater mains;
 - e) replacement/upgrade of the sub-standard high voltage and low voltage electrical network;
 - f) upgrade of the Central Emergency Power Station control and protection systems;
and
 - g) completion of the optic fibre supervisory cable ring on the western side of the Base.

42. Negotiations are progressing under the Stage 1 Redevelopment project with the Western Australian Water Corporation for connection with town potable, non-potable and waste-water systems. These negotiations have indicated that connection for potable and non-potable water can be achieved within the project delivery timeframe. However, the resolution of negotiations in relation to the waste water connection may not be achieved within the project delivery timeframe but the project will make allowance for future connection.

Base Fuel Farm

43. A new compliant fuel farm facility will include bulk fuel storage (4.4 million litres), quality control tanks, dispensing bays, unloading bay and tanker parking facilities. The fuel farm will include bunding, environmental monitoring, and automatic data capture and reporting, to comply with all regulations and industry best practice. The concept plan for the new fuel farm is at Annex C.

44. This element includes decommissioning and remediation of the existing fuel farm facility and site.

Fuel Quality Control Centre

45. This work element involves the construction of a purpose-built fuel quality control centre with associated laboratory, storage, workshop and office adjacent to the proposed new fuel farm. The concept plan for the new fuel quality control centre is at Annex D.

Combined Mess Facility

46. The new combined mess will consist of a centralised kitchen, storage and staff areas servicing separate dining rooms for the four rank groups. The facility will also have separate bar, ante-room and function room facilities for each of these groups. The dining areas are capable of catering for Base personnel as well as peaks in demand during exercises and or deployments (through the use of operable walls). The concept plan for the new combined mess is at Annex E.

Air Movements Facilities

47. The facility will provide new office facilities and staff amenities, and new passenger facilities. An extension to the building allows the removal of administrative and passenger functions out of the existing cargo hangar, thus returning it to its original function. The concept plan for the Air Movements facilities is at Annex F.

PC 9/A Maintenance Facilities

48. The aim of this work element is to upgrade/replace the PC-9/A maintenance facilities to provide administration and maintenance staff with a modern, efficient and safe workplace which meets the current standards. Specific works include configuration of the office and work space to improve functional relationships, upgrade the fire protection and detection systems, provision of evaporative cooling to the maintenance facility and air conditioning and ventilation to the offices, upgrade of lighting and power systems, provision of adequate sound proofing, and provision of hand basins and emergency eye wash facilities to the maintenance areas. The concept plan for the PC/9 maintenance facilities is at Annex G.

Noise Attenuated Engine Run-Up Facility

49. The aim of this work element is to construct a new engine run-up facility designed principally for use by the Hawk 127. This work element includes provision of a hardstand to accommodate one aircraft, an enclosed aircraft shelter with a tube sound attenuator and deflector end, and a sound attenuated personnel booth. The concept plan for the noise-attenuated facility is at Annex H.

Defence Restricted Network Connection to Base Briefing Facility

50. The Base Briefing facility will be connected with the Defence Restricted Network to enable visual presentations for conferences and briefings.

Living-in Accommodation

51. This proposal includes the construction of 128 new living-in-accommodation rooms to Building Code of Australia and Defence's standards for Cadet Pilots. The new accommodation will provide an individual bedroom including an ensuite, data and telephone connection, access to low-density laundry facilities and secure storage areas. The concept plan for the new living-in accommodation is at Annex I.

Demolition of Redundant Facilities

52. The project has identified dilapidated and surplus buildings that will be demolished as part of this redevelopment. Before demolition, architectural and photographic records will be taken as required for heritage purposes. Annex J illustrates the facilities identified for demolition.

MASTER PLANNING

53. Each of the project work elements will be constructed on sites that are consistent with the RAAF Base Pearce Master Plan, zones and precincts. Relocating fuel farm, messing and living-in-accommodation areas and proposed demolitions will clear valuable space for future redevelopment in accordance with the RAAF Base Pearce Master Plan.

SITE PLANNING, SELECTION AND DESCRIPTION

54. All the proposed works are contained within the existing boundary of RAAF Base Pearce. All work sites were carefully sited in accordance with the RAAF Base Pearce Master Plan and other siting criteria such as environment, heritage, geotechnical, operational, security, proximity to airfield, fuel and explosive ordnance facilities, engineering services, property issues and costs.

ZONING AND APPROVALS

55. This property is Commonwealth owned and Defence controlled. No civilian authority design or construction approvals are required, although works will comply with the relevant standards and regulations.

56. Upgrading of the in-ground infrastructure includes the replacement of Defence owned water supply mains outside of the Base perimeter. The mains provide service connections to the groundwater bore field, and to the main storage tanks in Bullsbrook. Since these services run across property which is not Defence owned, coordination of the proposed works external to the Base with the relevant external stakeholders will be undertaken.

LAND ACQUISITION

57. This project does not require the acquisition of land.

CODES AND STANDARDS

58. Where appropriate or as far as practicable, the design and construction of the proposed works and services will conform to the relevant sections of the following standards and codes:

- a) Building Code of Australia;
- b) Occupational Health and Safety (Commonwealth Employment) Act 1991;
- c) Western Australian Government Occupational Health and Safety legislation;
- d) Environment Protection and Biodiversity Conservation Act 1999;
- e) Australian Standards and Codes;

- f) Defence Manual of Fire Protection Engineering;
- g) Department of Defence Occupational Health and Safety Manual;
- h) Defence Facilities Communications Cabling Standard;
- i) Defence Security Publications;
- j) Defence's 'Disabled Access and Other Facilities for Disabled Persons' policy;
- k) National Code of Practice for the Construction Industry September 2006;
- l) Commonwealth Government Employment Code of Practice (Office and Amenities Guidelines);
- m) Commonwealth 'Energy Efficiency in Government Operations' policy 2006; and
- n) Defence's Ecologically Sustainable Development policy.

PLANNING AND DESIGN CONCEPTS

59. The adopted designs offer good economy in relation to floor area, while achieving the necessary functional requirements and work flow patterns. The project's design team has considered, during the preliminary design stage, the implications and estimates of costs for designs, materials, construction techniques, finishes, equipment and energy systems, which will deliver economies on a whole-of-life basis.

60. Maximum flexibility is required for most internal office accommodation facilities. Except where the need for security or noise reduction dictates otherwise, minimum use has been made of structural internal walls or columns in the new facilities to allow future flexibility.

61. This project will maximise use of the suitable existing infrastructure of buildings and engineering services to minimise capital facilities costs. Conventional construction techniques commonly used by the local construction industry will be adopted, with due regard given to climatic conditions.

62. The buildings will be fully fitted out with all communications, light fittings, partitions, floor treatments, furniture, plant and equipment. New facilities will incorporate building management systems, metering and other provisions to measure and monitor energy use and to allow regular energy audits.

ENERGY CONSERVATION MEASURES AND ECOLOGICALLY SUSTAINABLE DESIGN

63. The Commonwealth is committed to Ecologically Sustainable Development and the reduction of greenhouse gas emissions. Defence reports annually to Parliament on its energy management performance and on its progress in meeting the energy efficient targets established by the Government as part of its commitment to improve Ecologically Sustainable Development.

64. The preliminary design of the new facilities has considered the following measures to reduce energy consumption in a cost effective manner:

- a) reuse of existing infrastructure and recycling of materials where possible;
- b) siting buildings to make maximum use of prevailing winds and the sun for temperature control and lighting;
- c) using insulation and weatherproofing seals;
- d) using energy efficient lighting and lighting control systems;
- e) using energy efficient plant and equipment;
- f) providing the capability to control energy use by zones within the facility;
- g) specification of waterless urinals and water efficient fixtures; and
- h) using computer automated Building Management Systems as part of an area-wide energy management strategy with metering and other provisions to measure and monitor energy use and to allow regular energy audits.

65. All buildings included in this project will be designed, constructed, operated and maintained to ensure that they use energy efficiently. To achieve this, as a minimum, the buildings will comply with:

- a) Part I2 and Section J of Volume One of the Building Code of Australia;
- b) Part 3.12 of Volume Two of the Building Code of Australia;
- c) The Energy Efficiency in Government Operations (EEGO) policy 2006; and
- d) Defence Green Building Requirements Part 1.

As applicable to the classification of each building.

66. The office areas within the redevelopment facilities, that have floor area less than 2000 square metre, will be designed to comply with the minimum energy performance standards in accordance with the Energy Efficiency in Government Operations policy 2006.

67. The Australian Greenhouse Office, in the Department of Environment and Water Resources, has been consulted with respect to these energy efficiency requirements.

MATERIALS AND FINISHES

68. Materials and finishes will be selected from those readily available locally for their functionality, durability, low maintenance and for their ecologically sustainable design properties. Materials and finishes will be sympathetic to each precinct and with the existing building finishes and landscaping.

STRUCTURAL DESIGN

69. The design philosophy has been to provide a building structure that works with the architectural design of the building. Where possible facilities have been designed to suit residential construction techniques to simplify construction and reduce specialist trades. Where residential construction could not be used, a simple steel framed cost effective solution has been implemented.

70. Internal walls to office buildings have in general remained non-load bearing to maximise the flexibility for future refurbishment and use.

MECHANICAL SERVICES

71. New and refurbished facilities, with the exception of vehicle garages and workshops, will generally be air-conditioned. The selection of building services and associated equipment will achieve an economic balance between capital cost and operation and maintenance costs. Selection of equipment has been based on a life cycle costing analysis.

72. New facilities will incorporate building management systems linked to the base regional utility management system. Metering and other provisions to measure and monitor energy use and to allow regular energy audits will be provided where practicable. Mechanical plant will have a level of spare capacity to ensure future flexibility.

HYDRAULIC SERVICES

73. New facilities will be connected to the upgraded fire, water and sewage infrastructure within RAAF Base Pearce. Hydraulic Services have been designed to meet all Australian Standard requirements while offering maximum water efficiency.

ELECTRICAL SERVICES

74. Lamps will be high efficiency fluorescent, compact fluorescent or discharge type and lighting will include sensor controlled lighting to intermittently occupied areas.

FIRE PROTECTION

75. The design of the fire protection systems will comply with the Building Code of Australia requirements and specifically with any additional requirements of the Defence Manual of Fire Protection Engineering.

ACOUSTICS

76. The design of all facilities will comply with the acoustic requirements of the Building Code of Australia and the relevant Australian Standards.

SECURITY

77. Appropriate security protection will be provided in accordance with the Defence Security Manual and specific project requirements.

OCCUPATIONAL HEALTH AND SAFETY

78. The proposed facilities will comply with the requirements of the Occupational Health and Safety (Commonwealth Employment) Act 1991, the Department of Defence Occupational Health and Safety Manual and relevant Western Australian Government Occupational Health and Safety legislation. The facilities will also operate in accordance with an approved project Occupational Health and Safety Plan.

PROVISION FOR DISABLED PERSONS

79. Access and facilities for the disabled will be provided where necessary and appropriate in accordance with the Building Code of Australia, Australian Standards, and Defence's policy "Disabled Access and Other Facilities for Disabled Persons".

CHILDCARE PROVISIONS

80. No additional childcare facilities are being provided under this project.

LANDSCAPING AND IRRIGATION

81. This proposal will significantly reduce the number of irrigated lawn areas to reduce the Base water consumption. The remaining lawn areas are proposed to be irrigated through a proposed second class water supply system, with the non-potable water proposed to be sourced from Water Corporation. The gardened areas are proposed to be replaced with native

vegetation. Other landscaping works will aim to restore the areas that will be disturbed during construction and generally enhance the immediate built environment.

IMPACT ON LOCAL COMMUNITY

82. The RAAF Base Pearce redevelopment project will employ a diverse range of skilled consultants, contractors and construction industry workforce over the four year construction period. It is estimated that approximately fifty local trade sub-contractors and ten local sub-consultant companies will be contracted for this project. The project will also generate some job opportunities from the supply and manufacture of materials.

83. This project should have minimal impact on the day to day activities of the local community during or post construction.

PROJECT COSTS

Cost of Works

84. The estimated out turn cost of this project is \$142.2 million based on construction between 2007 and 2011. Costs include all planning, management and design fees, construction costs, furniture, fit-outs, equipment and contingencies.

Operating Costs

85. The total operating cost savings as a result of the proposed Stage 1 Redevelopment works is estimated to be in the order of \$0.5 million annually. Operating cost savings are largely influenced by the rationalisation of messing and living-in-accommodation on Base, which are expected to result in significant savings in contract costs for catering, cleaning and facility maintenance.

PROJECT DELIVERY

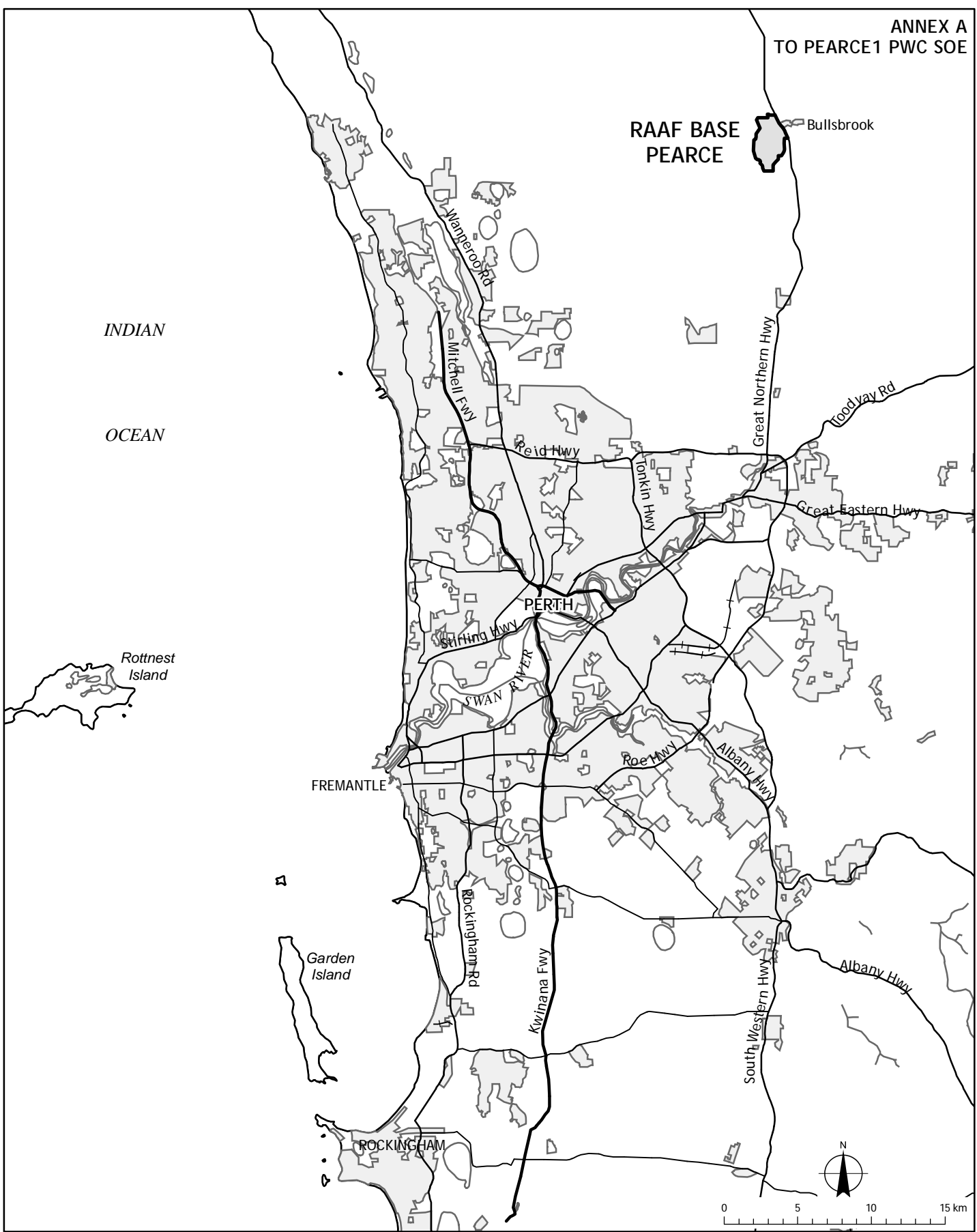
86. The proposed delivery system is via Managing Contractor. This form of delivery is well suited to projects where there will be a significant number of individual works being executed over a large area. Due to the need for RAAF Base Pearce to continue operations throughout the project period, this project will demand a high degree of coordination. The Managing Contractor has the ability to control and coordinate concurrent design and construction of disparate works and maintain a schedule which relies upon a tight sequence of events.

87. A Project Manager, that will represent Defence at RAAF Base Pearce and acts as Contract Administrator to the Managing Contractor, will be appointed for the delivery phase of the project.

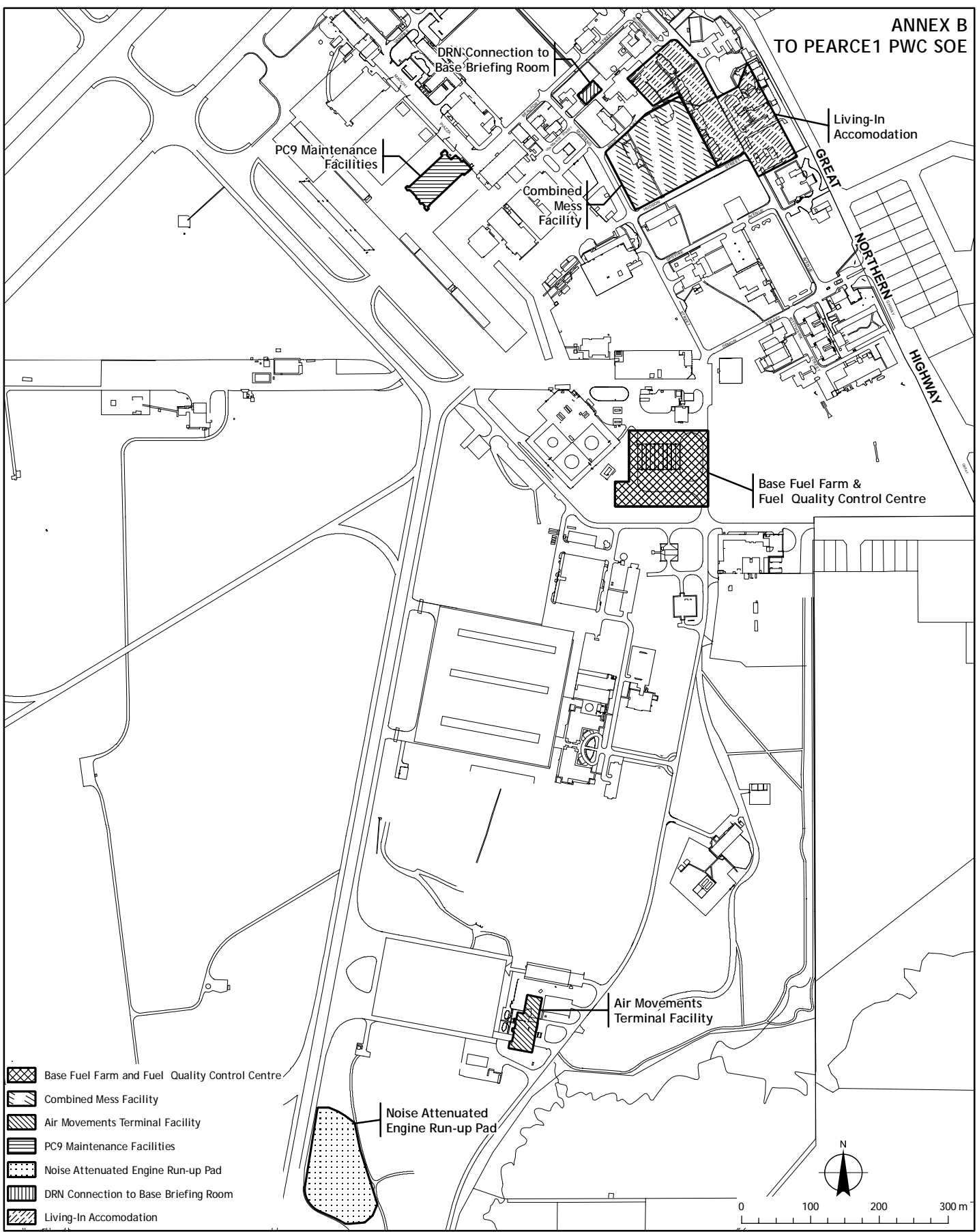
PROJECT SCHEDULE








88. Subject to Parliamentary clearance of this project, further design, tendering and then construction is scheduled to commence late 2007, with completion by mid 2011.

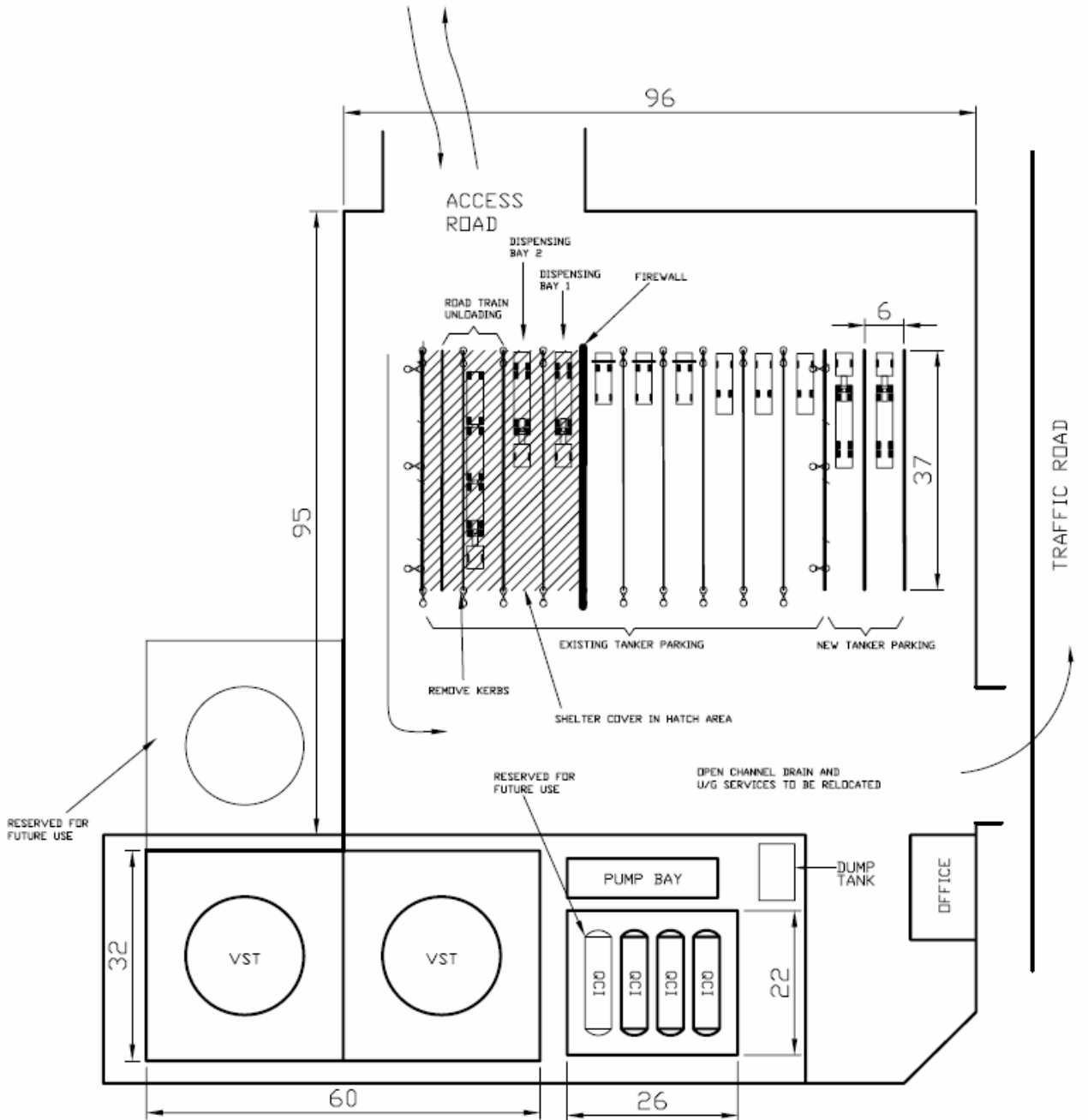
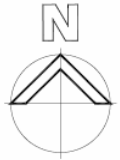
Construction will be staged to minimise disruption to Base operations.

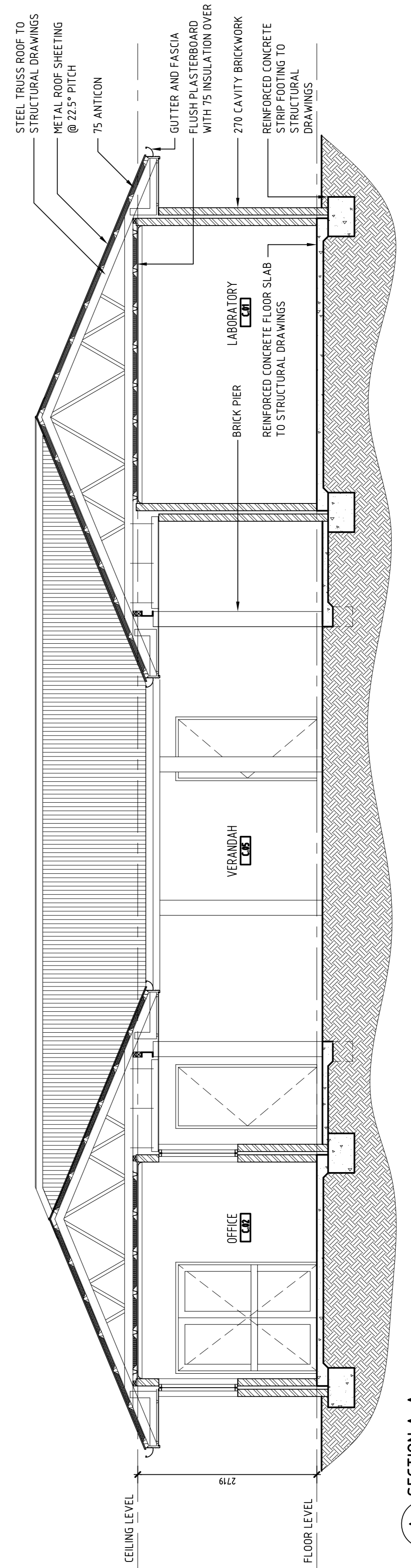
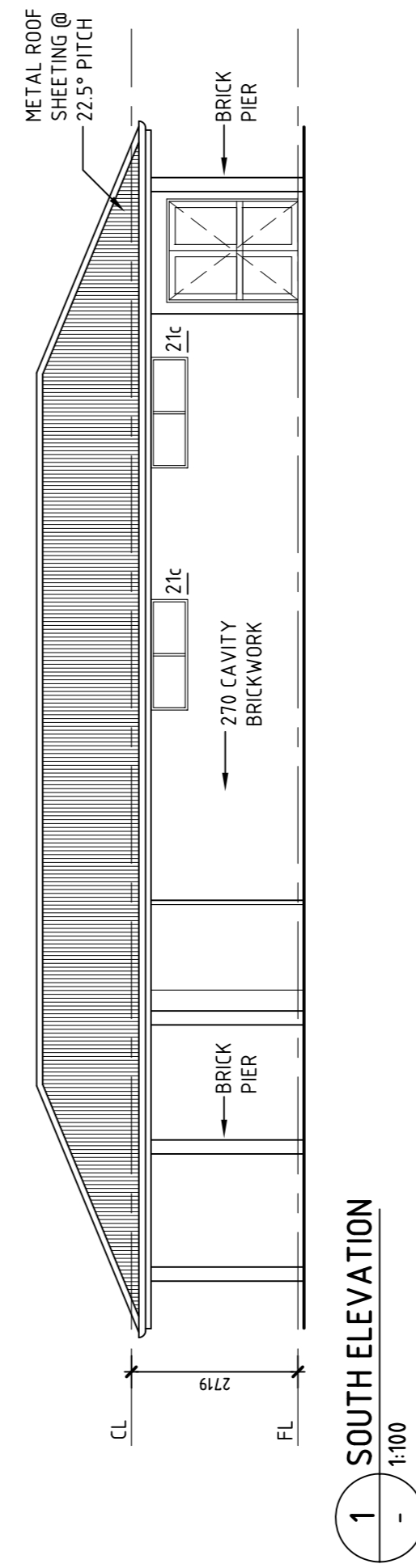
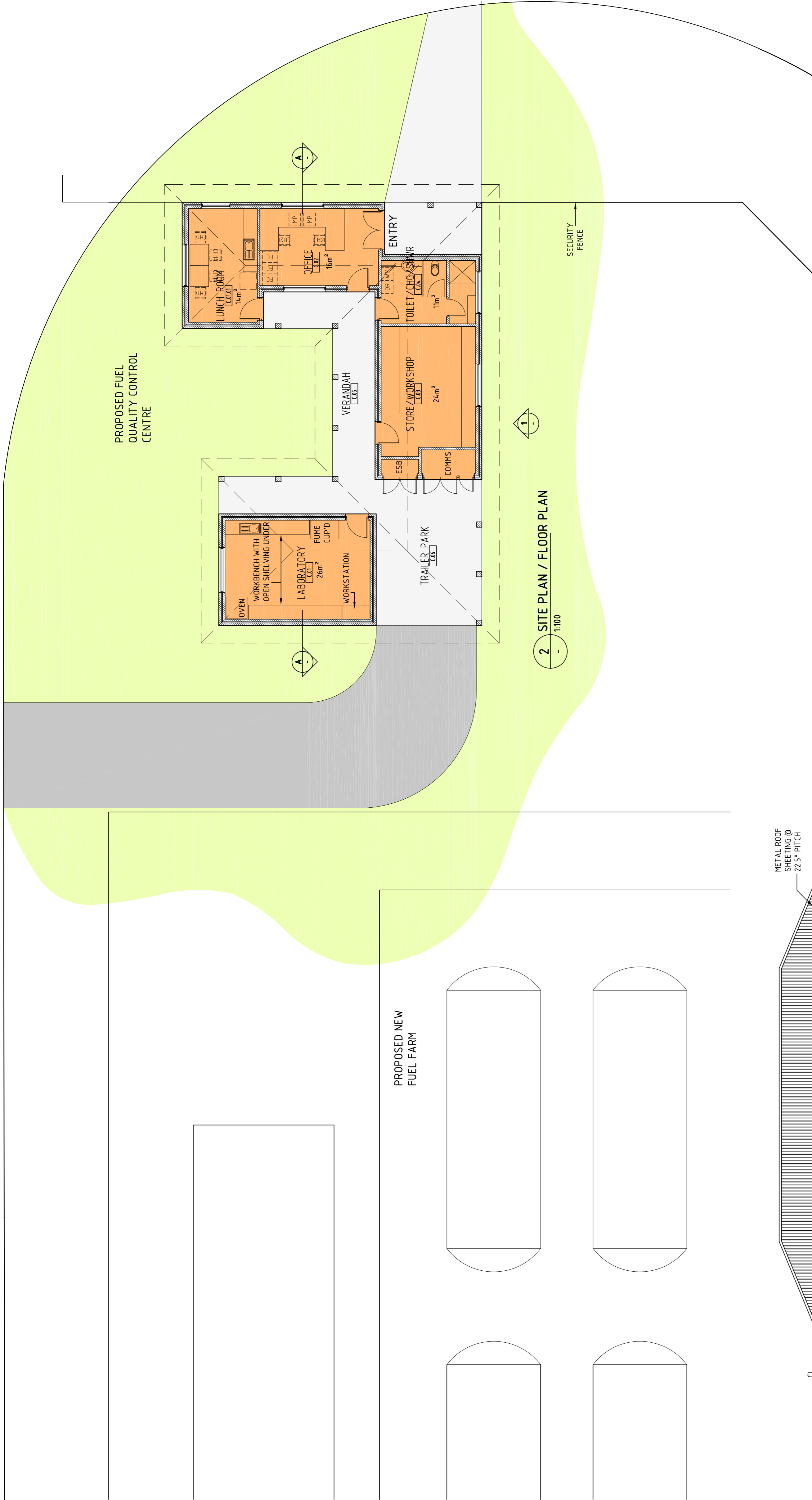
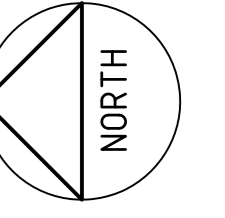


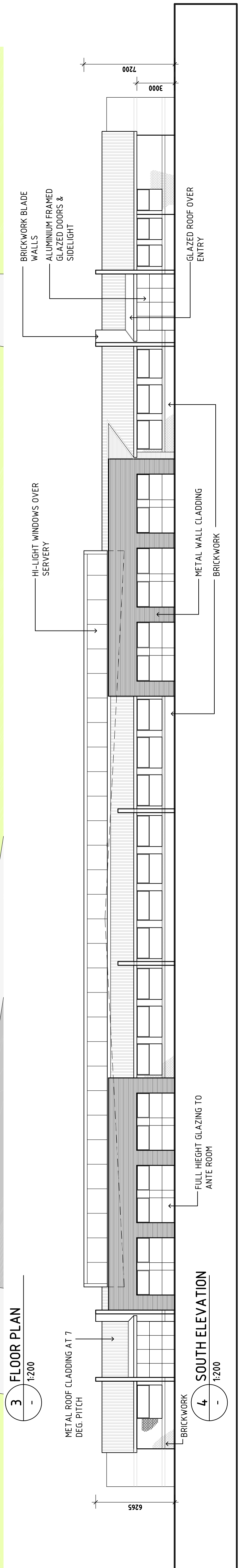
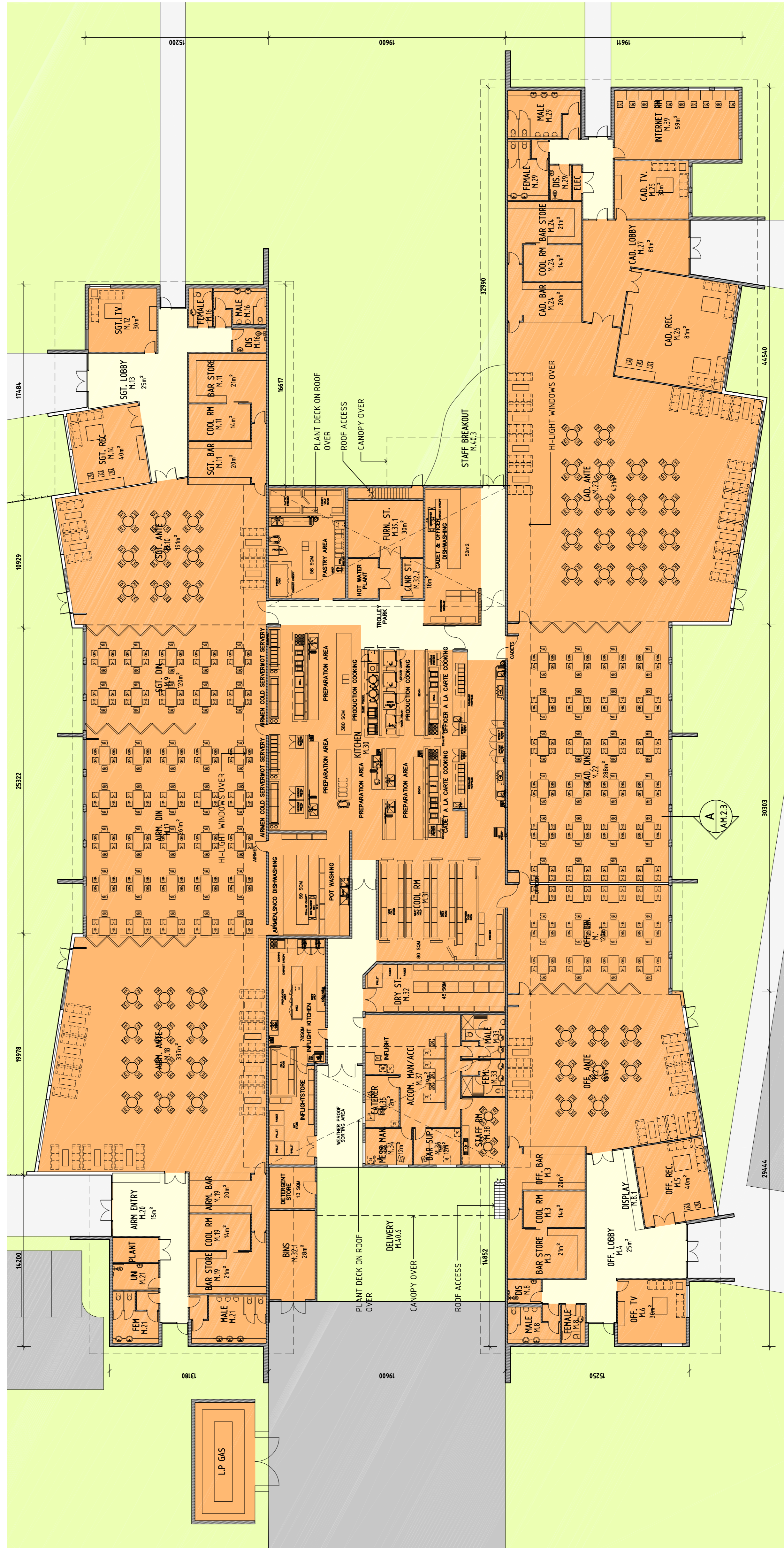
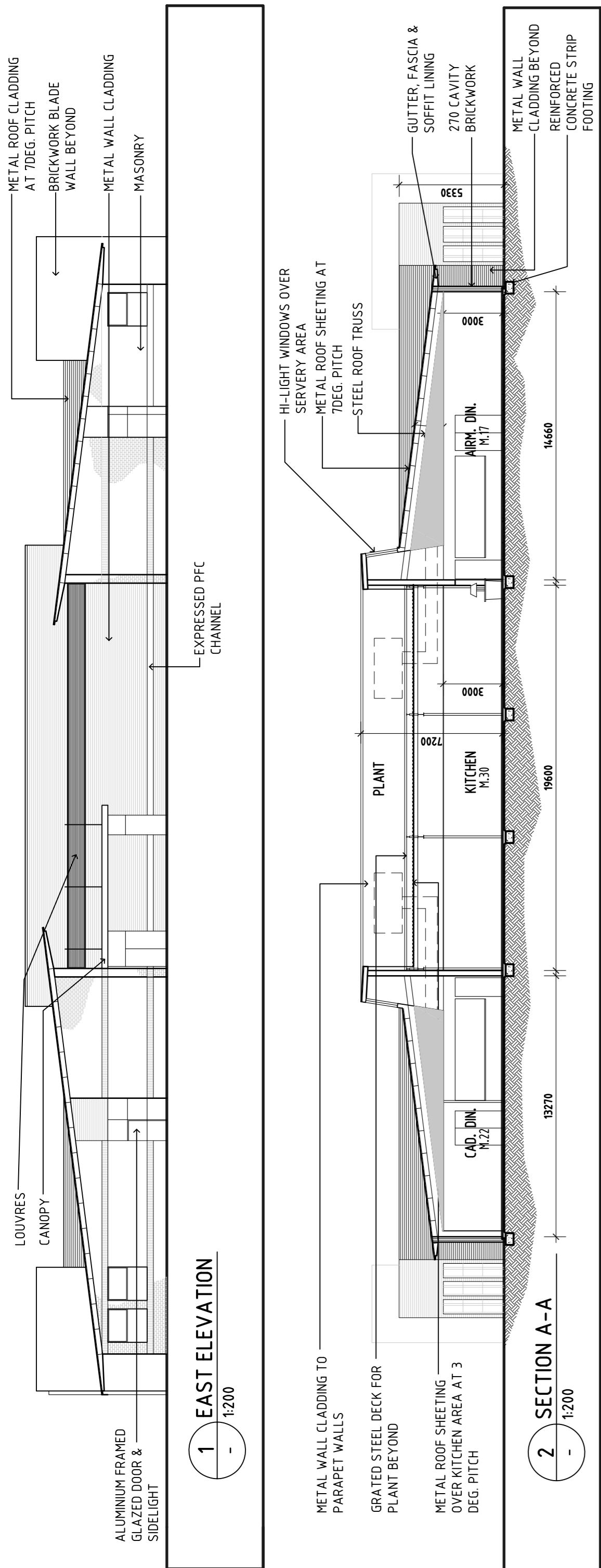
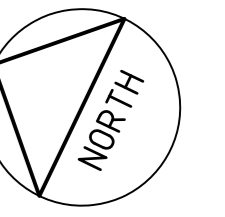
RAAF Base Pearce Redevelopment Stage 1
Location Plan

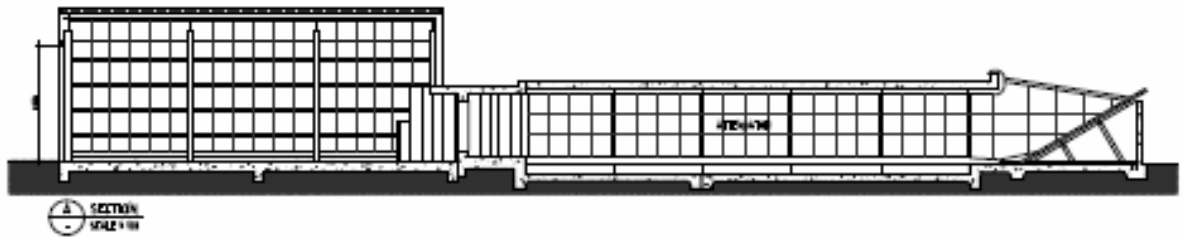
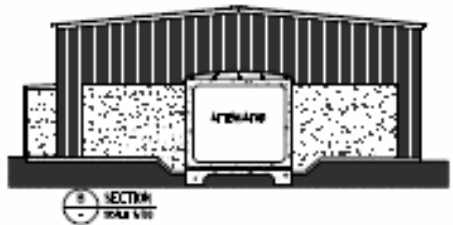
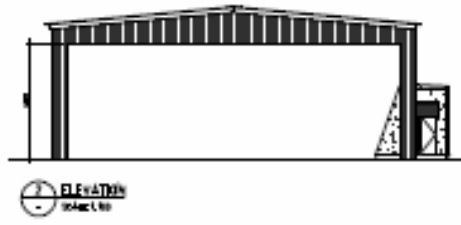
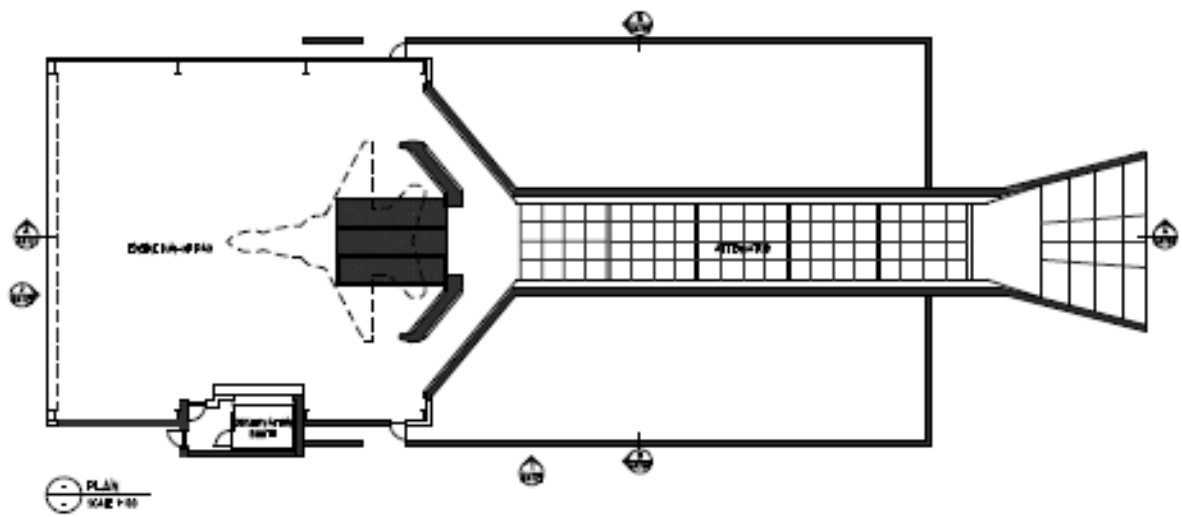
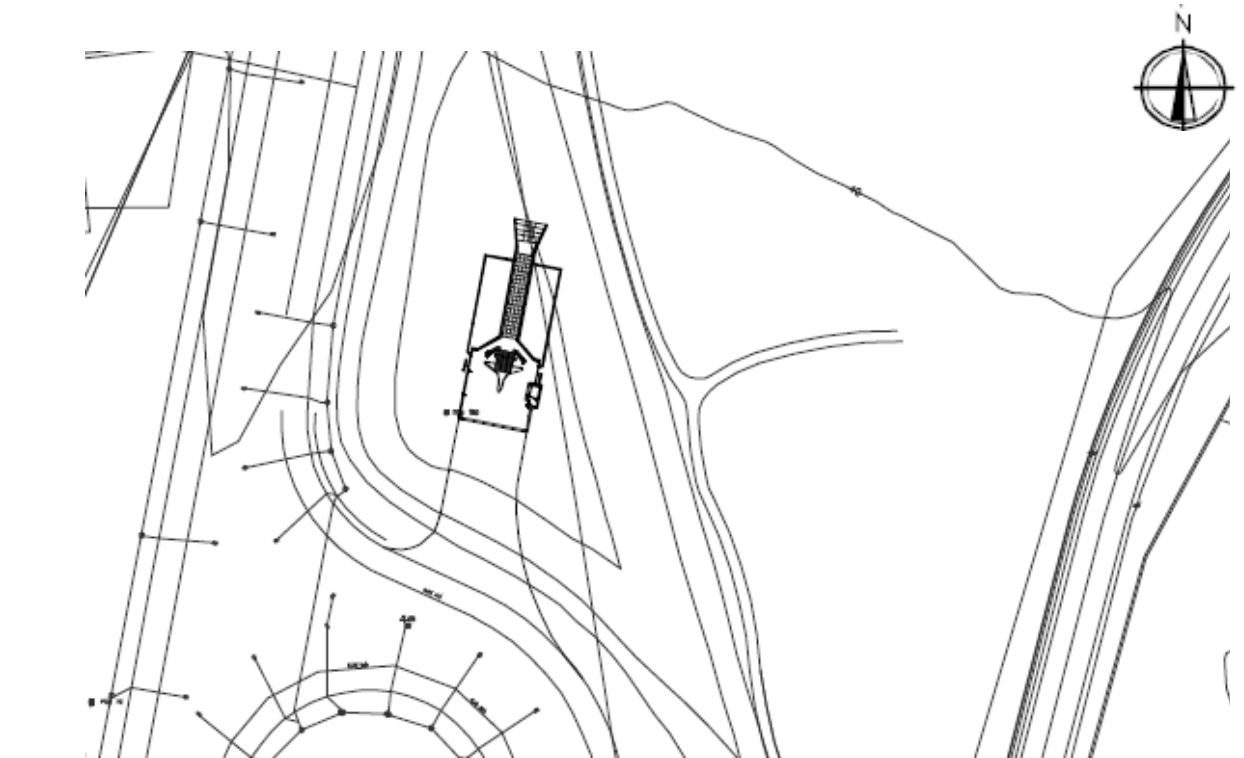


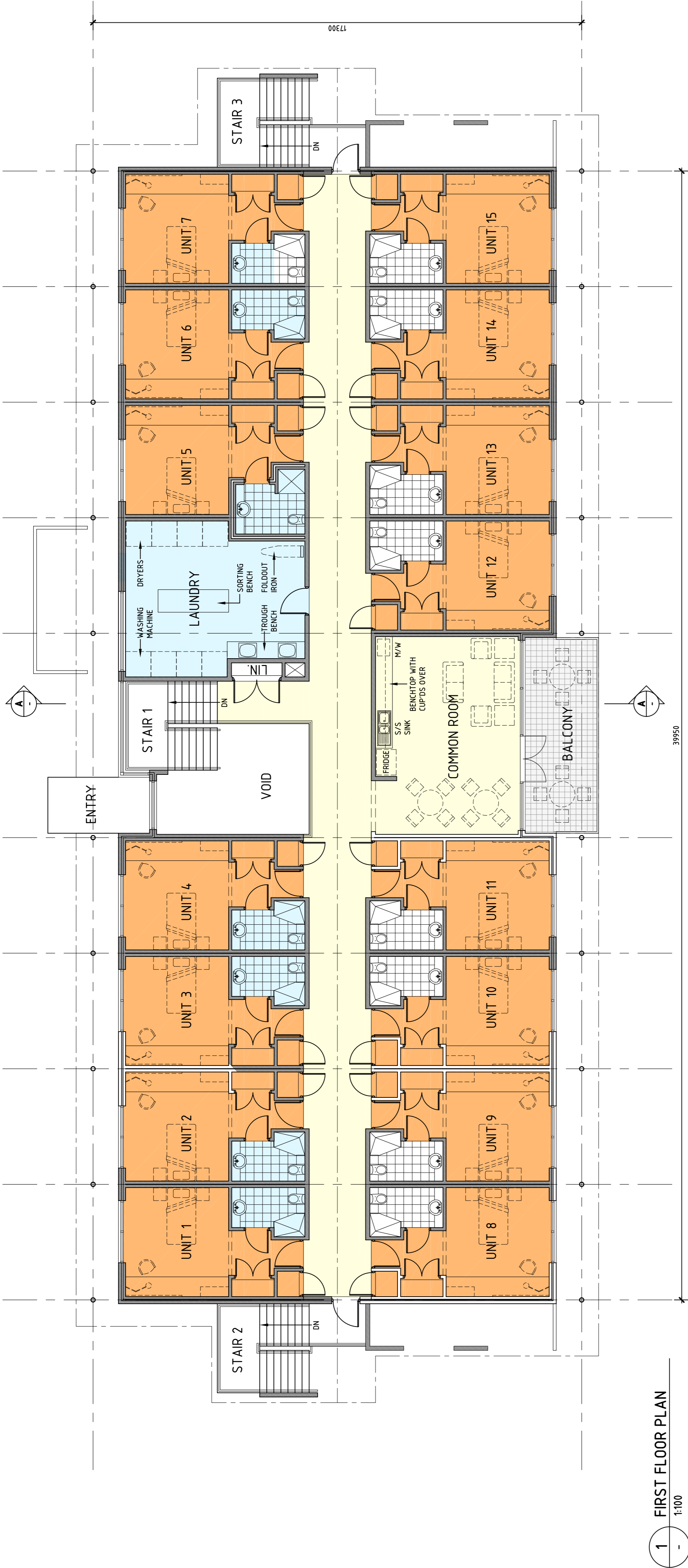
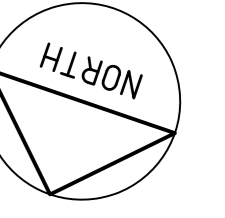
-  Base Fuel Farm and Fuel Quality Control Centre
-  Combined Mess Facility
-  Air Movements Terminal Facility
-  PC9 Maintenance Facilities
-  Noise Attenuated Engine Run-up Pad
-  DRN Connection to Base Briefing Room
-  Living-In Accomodation



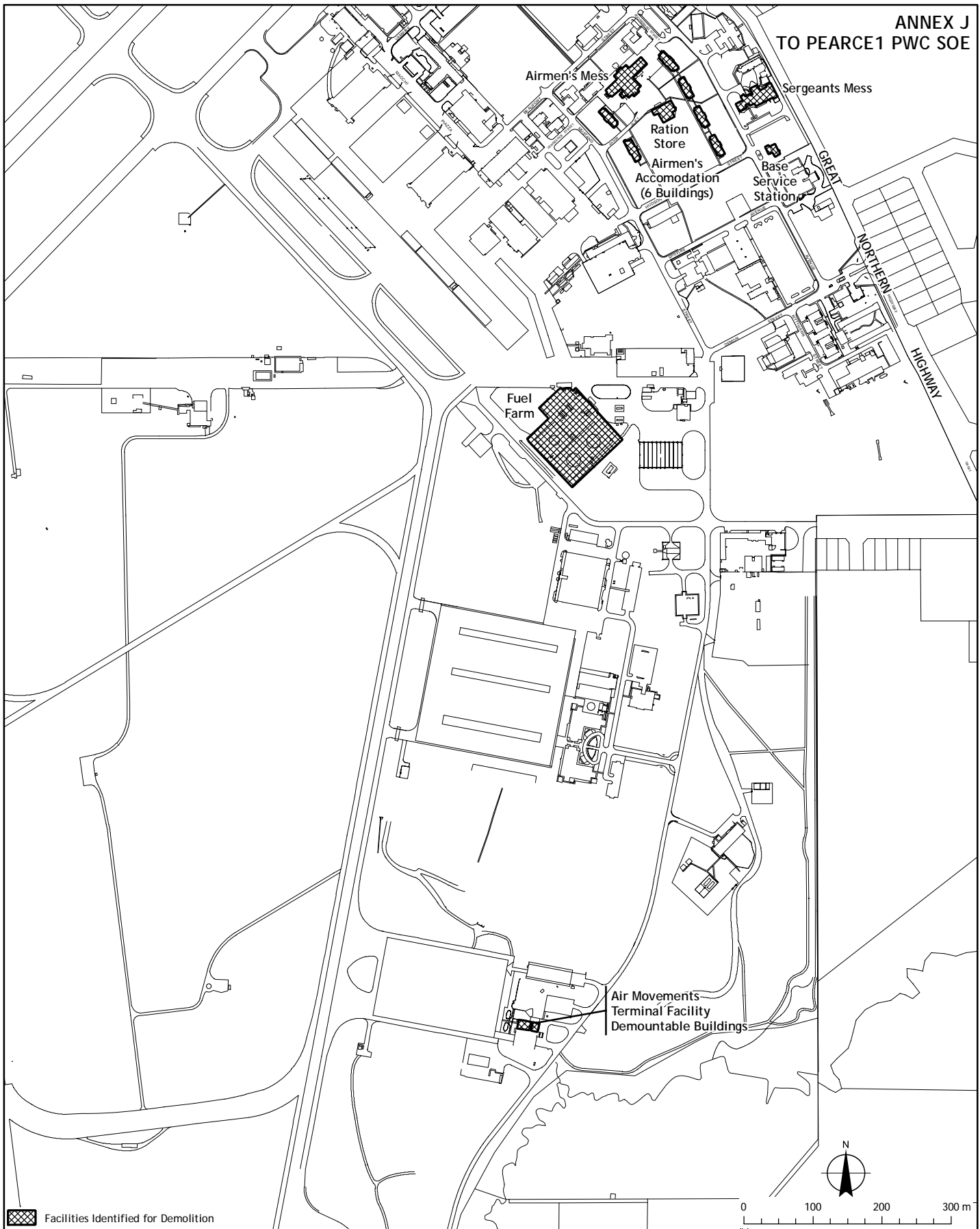






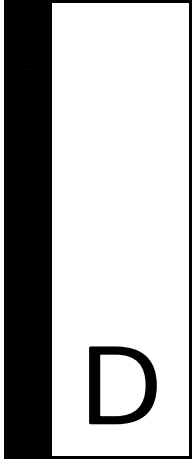


ANNEX J
TO PEARCE1 PWC SOE



Facilities Identified for Demolition

RAAF Base Pearce Redevelopment Stage 1
Facilities Identified for Demolition



Appendix D – Official Transcript of
Evidence



COMMONWEALTH OF AUSTRALIA

Official Committee Hansard

JOINT COMMITTEE ON PUBLIC WORKS

Reference: RAAF Base Pearce redevelopment stage 1, Pearce, Western Australia

THURSDAY, 19 JULY 2007

PEARCE

BY AUTHORITY OF THE PARLIAMENT

INTERNET

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<http://parlinfoweb.aph.gov.au>

**JOINT STATUTORY COMMITTEE ON
PUBLIC WORKS**

Thursday, 19 July 2007

Members: Mrs Moylan (*Chair*), Mr Brendan O'Connor (*Deputy Chair*), Senators Hurley, Parry and Troeth and Mr Forrest, Mr Jenkins, Mr Ripoll and Mr Wakelin

Members in attendance: Senators Hurley, Parry and Troeth and Mrs Moylan

Terms of reference for the inquiry:

To inquire into and report on:

RAAF Base Pearce Redevelopment Stage 1, Pearce, WA.

WITNESSES

GRICE, Brigadier William Alfred, Director General Infrastructure Asset Development, Department of Defence.....	2, 15
LOMBARDO, Mr David, Vice-President, Bullsbrook and Chittering Chamber of Commerce Inc.....	13
MARTINIELLO, Mr Gino, Project Director, Western Australia, Department of Defence.....	2, 15
REVIE, Mr Ian Cameron, Project Manager/Contract Administrator, RAAF Base Pearce Redevelopment Stage 1, Sinclair Knight Merz Pty Ltd.....	2, 15
THORPE, Wing Commander Anthony, Base Commander, RAAF Base Pearce, Department of Defence.....	2, 15

Committee met at 10.59 am

CHAIR (Mrs Moylan)—Welcome. I declare open this public hearing into the proposed RAAF Base Pearce redevelopment stage 1, Pearce, Western Australia. This project was referred to the Public Works Committee on 31 May 2007 for consideration and report to the parliament. In accordance with subsection 17(3) of the Public Works Committee Act 1969, which concerns the examination and reporting on a public work, the committee will have regard to the following: (a) the stated purpose of the work and its suitability for that purpose; (b) the necessity for or the advisability of carrying out the work; (c) in carrying out the work, the most effective use that can be made of the moneys to be expended; (d) where the work purports to be of a revenue-producing character, the amount of revenue that it may reasonably be expected to produce, and the present and the prospective public value of the work.

The committee earlier received a confidential cost-briefing from the Department of Defence and an inspection of the proposed works. The committee will now hear evidence from the Department of Defence and the Bullsbrook and Chittering Chamber of Commerce.

[11.01 am]

GRICE, Brigadier William Alfred, Director General Infrastructure Asset Development, Department of Defence

MARTINIELLO, Mr Gino, Project Director, Western Australia, Department of Defence

THORPE, Wing Commander Anthony, Base Commander, RAAF Base Pearce, Department of Defence

REVIE, Mr Ian Cameron, Project Manager/Contract Administrator, RAAF Base Pearce Redevelopment Stage 1, Sinclair Knight Merz Pty Ltd

CHAIR—I remind witnesses that they are still under oath from the confidential cost-briefing. Once again, I acknowledge the base commander, Wing Commander Anthony Thorpe, and thank you for facilitating this hearing today. I now invite Brigadier Grice to make an opening statement.

Brig. Grice—Thank you. The Department of Defence is proposing to undertake the first stage of redevelopment of RAAF Base Pearce. RAAF Base Pearce is very important to air force capability, being the flying training base for Royal Australian Air Force and Royal Australian Navy pilots. RAAF Base Pearce is the only fully-manned military air base in Western Australia and supports deployments, transit operations and exercises of the Australian Defence Force and foreign military forces.

The proposed redevelopment aims to replace aged infrastructure and facilities, with a focus on facilities related to pilot training. The RAAF Base Pearce redevelopment stage 1 project will involve: the upgrade and replacement of ageing base-wide engineering services to comply with Australian standards as well as with state and local codes and guidelines; the construction of a new base fuel farm to replace the current substandard facility; construction of a new fuel quality control centre to replace the current non-compliant facility; the construction of a new, combined mess to meet the needs of all personnel on base—replacing four ageing individual messes and reducing operating costs; upgrade of the air movements terminal and restoration of air cargo hangar facilities; upgrade of PC-9/A aircraft maintenance facilities to improve functionality and to ensure compliance with the Building Code of Australia, occupational health and safety regulations and the *Defence Manual of Fire Protection Engineering*. It will also include the construction of a new noise attenuated engine run-up facility to provide noise protection for personnel and reduce noise emissions outside of the base; the installation of a defence restricted network connection to the base cinema—this facility we are now in—to enhance its reuse as a base briefing facility. It will include the construction of 128 new level-3 living and accommodation rooms for trainee pilots to replace the current substandard facilities. It will also include the demolition of redundant facilities.

The proposed redevelopment strategy involves a combination of new and refurbishment works. The total estimated out-turn cost of the proposal is \$A142.2 million. Subject to parliamentary clearance of the project, detailed design, tendering and then construction are

scheduled to commence in late 2007, with completion of the project forecast for the middle of 2011.

Over the construction period of nearly four years, it is estimated that approximately 50 local trade subcontractors and 10 local subconsultant companies will be contracted for this project. In addition, it is anticipated that construction will generate further job opportunities offsite for the supply, manufacture and distribution of components and materiel for local and national contractors and suppliers. That ends our statement, and the Defence witnesses are ready to take questions from committee members.

CHAIR—As the federal representative for the electorate of Pearce, in which this base sits, I have been a regular visitor to the base and recognise the importance of this work taking place, given the age of many of its facilities and buildings. I know that personnel at the base work hard at being good members of the community, and I am sure that the work will be generally welcomed. Our job as a committee is to make sure, as I said, that the work represents good value for money for all taxpayers. We will now go to Senator Troeth for questions.

Senator TROETH—On our tour of the base earlier this morning, the first section that we looked at was the noise attenuated engine run-up facility. Could you provide us with further details on that—how it will be built and how it will improve the present situation.

Brig. Grice—The base has a requirement to conduct testing of aircraft engines after maintenance. As you saw on the tour today, currently that is conducted on an open concrete slab, which is located about 100 metres away from the boundary of the base. During the process for testing the engines, maintenance personnel are required on the apron and protect themselves from noise damage by using ear muffs. We are going to deliver a new noise attenuation system, which will consist of a building into which the aircraft will be placed and a sound attenuation tube which will absorb noise emitted from the rear—the pollution.

In answer to your question of how the tube attenuator reduces noise emissions, to reduce the sound levels produced by the particular test aircraft, the noise levels, the decibels, must be reduced. To achieve this, the sound must be reduced in amplitude and in intensity. The tube attenuator is a tunnel structure through which the aircraft noise is directed. Its construction consists of a suitably supported dense outer layer, normally concrete, which is lined with a sound absorbent material such as glass fibre or rock wool. This is then separated from an inner liner by an air gap. The inner liner also has a sound absorbent layer, which is attached to a perforated steel sheet facing, which forms the initial contact face with the soundwaves. Sound enters through the perforated sheets and its acoustic energy is reduced by absorption by the lining materials as the soundwaves are reflected across the void. Further sound reduction is achieved by the introduction of baffles at the exit of the tube attenuator, which again reflect and absorb the energy. The overall shape, length and other factors of the tube attenuator determine the amount of noise reduction that is achievable. In addition, the area above the aircraft enclosure to which the attenuator is attached will also be acoustically designed to minimise sound break-out.

Senator TROETH—How are the personnel who are performing this duty also protected from excessive noise?

Brig. Grice—Inside the engine run-up facility will be a sound attenuator protected booth. The maintenance operation will be conducted from there and maintenance personnel will be enclosed in that facility. This will reduce their exposure to noise and increase their occupational health and safety.

Senator TROETH—That is obviously a vast improvement on their standing on the open concrete slab and wearing ear muffs.

Brig. Grice—It will also reduce noise emissions from the base.

Senator TROETH—Good. I understand that the building in which we are having this hearing is the former base cinema. One of the options considered for part of the works was to undertake a substantial upgrade of this building to improve its level of amenity for alternative use as a briefing facility. Are you going ahead with that option? What are the further developments for this building that you have planned?

Brig. Grice—The only work that we will do in this building will be to increase its utility by installing a Defence restricted network hub to the building. This will give us the capability of plugging up to 24 computers into this facility so that it can be used for computer based training and other activities, such as presentations and briefings during which an overhead projector and computer based PowerPoint presentations can be used for display purposes. We are not going to do any other work on the building. As you can see, base maintenance personnel from Defence Support Western Australia have done a good job in maintaining this building over its more than 70-year life span. It will remain and will continue to be maintained in its current condition.

Senator TROETH—So you are satisfied with the level of maintenance that you have at the moment. Thank you for that. That is probably all I want to ask about.

Senator PARRY—Perhaps I could thank Wing Commander Thorpe. You have made me feel at home, as the temperature here is very similar to that of Tasmania! Thank you very much. Here am I thinking that I was escaping the winter weather! I want to discuss the tender process. Is it correct that Sinclair Knight Merz have been appointed the managing contractor?

Brig. Grice—They were appointed the project manager/contract administrator for the project. John Holland was selected as the managing contractor for the development phase of the project.

Senator PARRY—How many tenders were received for each of those two appointments?

Brig. Grice—The procurement of the managing contractor was a two-stage open tender process. As a result of expressions of interest, three nationally based companies that were qualified to do the work were short-listed for the second stage of the tender process. All three companies submitted a tender for the work and John Holland was selected as the best value for money for the Commonwealth for the development phase of the project.

Senator PARRY—Again without giving away any financials that we have discussed previously, can I ask whether the tenders were within a reasonable range of each other?

Mr Martiniello—In assessing the tenders, we had an average of what we were expecting and they all came within that average.

Brig. Grice—The other thing to say is that our tender evaluation process is a two-step process where, independent of the costs, we look at the technical merit of the proposals and come up with an initial technical evaluation board's agreed technical order of merit. We then look at the costs of the separate proposals and a value-for-money assessment is made, involving both technical and cost, to come up with the best value for money for the Commonwealth.

Senator PARRY—Moving to the tour we had this morning, I think you, Wing Commander, spoke of throughput when we went to the passenger terminal. Could you state for the public record the maximum volume expected at any peak or any surge period in the passenger terminal?

Wing Cmdr Thorpe—Peak in number of aircraft?

Senator PARRY—The number of passengers.

Wing Cmdr Thorpe—Based on projections—and I guess the basis of the project is really about being able to support future operations—obviously, with the new aircraft types that we have here, the potential number inwards and outwards is in the order of hundreds. Flights coming in are not necessarily limited to single aircraft movements at any one time. We have the capacity in that area to put at least three C130s in close proximity to each other and, with the new capacities coming on board, certainly a couple of C17s. So certainly the capacity would be in the area of several hundred people at any one time.

Senator PARRY—I gather that frequency of passenger throughput, which you mentioned this morning, is not a confidential matter.

Wing Cmdr Thorpe—It is probably more a case of cargo at this stage, but certainly passenger movements could be determined on a weekly basis.

Senator PARRY—So there is a need to upgrade the facility, as clearly established, due to volume.

Wing Cmdr Thorpe—Certainly.

Senator PARRY—In addition, Customs will be improved in that new facility.

Brig. Grice—The new facility will include facilities for AQIS and Customs to undertake their activities for both arriving and departing flights.

Senator PARRY—Are they co-located here currently; is a Customs facility co-located?

Wing Cmdr Thorpe—No. Typically, when we have international flight requirements, we will contact them through our operations staff. With the good relationship we have with those staff, they will come out on an as required basis, and they work from the facility that we saw this morning.

Senator PARRY—We discussed thermal relief this morning and I asked a question on tour about thermal relief of the fuel pipes. The current situation is not dangerous, but you need new piping for thermal relief. I gather that a valve structure just does not exist. Could you explain further?

Brig. Grice—When the fuel facility was built, the codes and standards were not what they are today. Those requirements are for the current standards for the construction of those facilities. There is a low risk of a pipe bursting, but Australian standards are designed to eliminate the great majority of risks and it is incumbent on Defence to provide a facility that meets those standards.

Senator PARRY—Is that through both atmospheric temperature as well as pressure in the pipes or just atmospheric temperature?

Brig. Grice—Atmospheric temperature would lead to pressure in the pipes.

Senator PARRY—We have hangars 93 and 95, with 94 as a blank. It is very confusing for us when we do not see 94. You indicated this morning, Wing Commander, when we were travelling around that there will be a relocation and you will be able to accommodate everyone when you decant from hangar 95 into another facility. That poses the question: why do we need the facility upgrade if you can relocate them elsewhere on the base? Could you explain, please?

Brig. Grice—I will start with this question and then pass to Wing Commander Thorpe to provide a bit more information. We will have to tighten our belt in other areas on the base in order to make space so that up to 12 aircraft, which can be serviced in that facility, can be serviced in two other locations on the base. It is not that there is an empty facility out there that can be used. With some workarounds, including possibly taking materiel out of a warehouse and putting it in temporary storage, either in isocontainers or under some other cover, space could be created to be used for an intervening period so that maintenance could be undertaken. Of course, that would be a temporary facility. It would have the barest of fire detection and suppression measures. During the period that we operate out of such temporary facilities, we will need some waivers from our detail design acceptance agency in Defence.

Senator PARRY—You used the word ‘squeezed’ this morning, which is probably quite appropriate. Will there be any compromise in operational capability?

Wing Cmdr Thorpe—As we saw this morning, that hangar space has the capacity for 12 aircraft to be worked on at any one time. The proposed facilities that we would temporarily use do not necessarily have the capacity for up to 12. The air flight contractors believe that they are able to provide the aircraft requirement, given the facilities that we are talking about and proposing that they use. So I do not expect that we will have any compromise in capability for pilot training.

Senator PARRY—With safety for maintenance, the issue is the same; there will be no compromise there?

Wing Cmdr Thorpe—Certainly, there is no going backwards in terms of the support associated with the use of the facility that we are offering and talking about.

Senator PARRY—You indicate that there will be a reduction of the sound attenuation that Senator Troeth asked about. Is there a known percentage reduction or an approximation of a percentage reduction in the sound emission?

Wing Cmdr Thorpe—Significant sound testing has been done in and around the base, so we do have good figures on the sound from aircraft engine running across the base.

Brig. Grice—A noise modelling report was undertaken in December 2006 and a further field study to record the actual noise levels emitted by aircraft being tested to establish the degree of noise attenuation required was carried out and a report was issued in May 2007. These results provide the information upon which the design will be based. Based on the results of testing the information provided for the run-up of Hawk and the proposed location with no enclosure, there is potential for the emitted noise level contributed to exceed the set Western Australian government's environmental protection authority noise summary of the regulations by 24 decibels at residential receivers external to the base location. The maximum required attenuation that would have to be achieved by the new run-up facility would equate to at least 24 decibels. That would be the level of reduction.

Senator PARRY—Is that the level, or is that the desired level?

Brig. Grice—No. That is the reduction. I do not have the desired level here.

Senator PARRY—So you will be reducing noise emissions by 24 decibels?

Brig. Grice—Correct.

Senator PARRY—Do you know the percentage? What is the current decibel level?

Brig. Grice—This is a logarithmic scale, so it is of the order of maybe 10,000. It is a big number.

Senator PARRY—There is a significant reduction, in any event.

Brig. Grice—And the noise at the boundary of the base will then comply with the Western Australian Environmental Protection Authority requirements.

Senator HURLEY—I would like to go through the water conservation and other measures on the base. I understand that the base uses a groundwater bore field. Is that shared with other properties in the area and all of the town, or is it a separate field underneath the base itself?

Brig. Grice—The RAAF Base Pearce water supply is currently drawn from a base bore field which is approximately 3.5 kilometres west of the base, on Neaves Road. The water is drawn from the shallow Leederville aquifer by bore pumps, and it is fed to the Neaves Road pumping station from where, upon demand, it is pumped to the base tank at Pearce. Upon demand, it fills the base's potable water storage tanks on Chittering Road, approximately two kilometres east of the base. Water is then gravity fed to the base from that site.

The base's infrastructure is up to 70 years old in some areas and has been built upon over the years as the base has grown. The base's potable water system provides potable water for drinking, domestic and industrial needs of the base, and it is the firefighting supply and the second-class water supply for the base gardens. The nine-megalitre Chittering Road tanks are sized to provide a backup for the base's firefighting needs, and the potable water main is made up of a variety of materials such as cement lined cast iron pipe from the thirties, asbestos cement pipe and PVC pipe.

Due to the age of the infrastructure, Pearce is experiencing a significant amount of water main and tributary failures. In 2006 there were 33 failures and, so far this year, there have been more than 17 failures. We are currently drawing water from our own bore field, not the town supply. However, over the past three years, RAAF Pearce has had significant water quality issues with the water from this bore field that have posed some risks to health and required the base to go on to bottled water and stop using its own potable supply. There were incidences in the water of amoeba, naegleria, ecoli, thermotolerant coliforms and high heterotrophic platelet counts that were the result of these water quality issues.

The cause of the issues was attributed to some problems with the water system. The Western Australia Water Corporation regard the Leederville aquifer as a medium risk for pollution from surface contaminants, such as farming operations and livestock, and that could be contributing to the contamination of our drinking water. The existing RAAF Pearce potable water system does not have a filtration system. The piping system on RAAF Pearce is old and has a significant build-up of corrosive materials, sediments which can harbour bacteria and contribute to high heterotrophic platelet counts. The RAAF Pearce pipeworks system feeds the base's second-class grounds reticulation systems, and these systems are currently predominantly not fitted with backflow prevention devices. This has the potential to allow contaminated water back into the potable water mains.

RAAF Pearce also has a number of cross-connection points from the hill tank supply system that have the potential to allow untreated water contamination of the potable water system. Pearce water quality is also adversely affected every time there is a pipework failure. So, 33 times a year, when there is a pipework failure, sedimentation in the pipes is disturbed and this increases our problems. During the early part of 2007, the local district support group was unable to maintain adequate chlorination levels in accordance with the Australian Drinking Water Guidelines. Due to the current water quality concerns, the base has stopped personnel drinking the water from the base's potable water supply.

As a result of the drinking water supply being shut down, the local DSG region fast tracked negotiations with the Western Australia Water Corporation to provide a potable water supply from their system to our Chittering Road tanks. An order has been placed with the water corp to provide a 50 mm supply line to our site. Currently, DS Western Australia are running an investigation on the site to determine the scope of the works required to enable the base supply to return to potable quality in accordance with the Australian Drinking Water Guidelines. Because of all the issues I told you about that are basically the result of the age of the infrastructure, there is the possibility that the base will not be able to return to drinking water standards until the base redevelopment project has been completed and we have replaced all the potable water mains on the base. So that is the current situation with water. It is a complex situation and it shows, again, the need for the engineering services part of this upgrade, which, as

you saw from the confidential cost estimate this morning, is a substantial part of the redevelopment works.

Senator HURLEY—Given the number of buildings on the site, has or will any consideration be given to retaining stormwater and using it for services? You say you currently use potable water for irrigation and firefighting and so on.

Brig. Grice—On the tour this morning, one of the A1 drawings we held up was for the irrigation piping system. The redevelopment project will split the current combined system into a potable water system, which will be fed with potable water, and then an irrigation system, which will be fed with non-potable water. With regard to water conservation measures, we will be reusing captured rainwater from roof structures, primarily in the living-in accommodation for toilet flushing. We will be installing waterless urinals throughout all the areas touched by the redevelopment project. Each waterless urinal installed will result in water savings in the order of 150,000 litres per year.

We will be using a selection of restricted flow tap ware and fittings to meet the requirements of the Water Efficiency Labelling and Standards. In the buildings that are affected by the redevelopment, we will be installing grey water pipe work for toilet flushing so that if in the future recycled water is made available on the base or through the local supply authority we will be able to retroconnect those buildings to use wastewater and recycled water. Because we are splitting the irrigation main from the potable water main should recycled water become available in the future, we will be able to use recycled water for that purpose.

Senator HURLEY—I am thinking of systems whereby stormwater is channelled into retention ponds and kept there for future use. So it is not only water from roofs and water tanks but also stormwater from around the base that could be retained.

Brig. Grice—We have an existing bore field. I think the climatic data for this part of Australia does not lend itself to that for the long term.

Senator HURLEY—So there has been some investigation of that option?

Brig. Grice—Yes. The non-potable water will continue to, obviously, be sourced from our bore-water field. That is the most cost-effective option at this stage.

Senator HURLEY—So there is an existing bore field on base?

Brig. Grice—It is on Defence land about three kilometres from here.

Senator HURLEY—Is that the aquifer you were talking about before?

Brig. Grice—Yes. And there are water quality issues because of the livestock grazing and that type of thing.

CHAIR—I want to talk about some of the energy and water conservation measures too. I think members of the committee would join with me in congratulating Defence on addressing

some of the energy conservation issues. The public are often not aware, as you say in paragraph 63 of your submission, that:

Defence reports annually to Parliament on its energy management performance and on its progress in meeting the energy efficient targets established by the Government as part of its commitment to improve Ecologically Sustainable Development.

I note there is quite a lot of information for the committee on what you are proposing to do in terms of sustainable energy. There was only one reference to water conservation that I could see and that was at paragraph 64(g)—and that was only one line. So I was pleased to hear you elaborate a little more on that.

As the federal member for this area—and I know we are going to hear from the local chamber business organisation—I am aware of tremendous pressures on these communities along this stretch of the Great Northern Highway and the fact that development is seriously impeded by the lack of availability of water and sewerage. I know it is critical just further up the track; they have considerable development pressures placed upon them and are not able to maintain infrastructures and services like schools and aged-care facilities because there is simply no water. This is a very serious issue right around the country, but it certainly is one I am aware of here. I wonder whether there is scope to do much more with regard to water conservation. For example, I was talking to one of my constituents the other day who has installed two 2,000-litre rainwater collection tanks on his small property and that goes a long way to making him water efficient.

There is nothing in here about how laundry is managed from the living-in accommodation and the messing facilities, and what might be able to be done to have a rainwater collection system to service laundries, if that is a facility that is going to be available on base. With living-in accommodation, I note there is a report that came out recently saying that in many cases rainwater tanks are not efficient. I understand that in the case of firefighting services and the necessity for large quantities of water for industrial areas, but I would have thought—and I would like for you to go back to the drawing board on this one—that a lot more could be done to collect rainwater off those buildings for domestic arrangements and to use it for potable water. This constituent tells me that he collects all his drinking water and uses the water also for his laundry and bathroom facilities. The other thing is that in the messing facility, one of the biggest users of water will probably be the constant need to wash and clean. I wonder what capacity there is for rainwater collection to provide potable water to the messing facility and for the other water requirements for that building. Would you like to comment on that? I know we will have an opportunity to pursue this a little further when we hear from our colleagues.

Brig. Grice—We have discussed the water and energy efficiency measures that we are proposing with the Australian Greenhouse Office. Currently, we will meet federal water efficiency use guidelines. With regard to laundries, there is no centralised laundry here; there are laundries in the living-in accommodation. Part of our green building requirements is for dishwashers, refrigerators, washing machines and clothes driers to have minimum energy and water use efficiency ratings of different levels. There are 3½ stars, four stars for washing machines and that type thing. We are reducing the irrigated area on the base significantly. We will be reducing the amount of potable water that we use. In 2006 the total water consumption of

the base was of the order of 107 megalitres, which is about 1½ days use for the city of Canberra. That is for all purposes—irrigation, washing, drying, potable and non-potable uses.

We do not have an estimate of what the reduction in usage will be following the completion of the redevelopment, but it is expected that water use will reduce significantly once we have redeveloped the water and irrigation systems. Currently, there is significant water wastage due to water main failures and system flushing being required every time there is a water main failure. These failures will reduce once the mains have been completely replaced. Additionally, the ESD measures that we are introducing through the redevelopment project will result in reduced consumption of water overall, with AAA rated shower heads and all those types of things. We have commissioned an ESD report to look at the feasibility of how to minimise our usage to meet the government's policies, and these are the activities that we have decided to do.

CHAIR—Again, I appreciate all that you are doing. It is commendable that all of these things have been thought through, but I still think that the particular problems within this corridor that I am aware of—and I have taken those matters to the federal minister and we are still not able to resolve them—are causing critical problems for the community. I would be surprised if there are not further measures that could be taken. We are talking about a \$142.2 million project, so putting water collection systems into the domestic facilities and into the messing facilities surely could not represent a huge percentage of the total development cost.

Brig. Grice—We are putting rainwater tanks in, both in the mess and in the living-in accommodation. The rainwater collection system will be used for toilet flushing and there will be a cold water inlet into the laundry as well.

CHAIR—What about using it for potable water?

Brig. Grice—The best use for rainwater is to minimise the use of potable water, not to use it as potable water. With rainwater, you have to ensure the cleanliness and the condition of the collection mechanism to guard against giardia and bird-borne diseases. Where in an individual house or in an individual block that may be relatively easy, that would greatly increase the maintenance bill on a base such as this.

CHAIR—Forgive me, but it sounds like it is riskier drinking the water from the tap as things stand at the moment.

Brig. Grice—At the moment, yes, that is correct.

CHAIR—You might like to come back to the committee after you have re-examined some of those issues. As I said, the submission makes only one very short reference to water efficient features. It gives no scoping of just how you are proposing to do that.

Brig. Grice—Would you like us to come back with a full discussion of the water-saving measures that we are implementing with the project?

CHAIR—Yes, please.

Brig. Grice—We would be pleased to do that.

Senator PARRY—I would like Brigadier Grice to quote those bacteria names again!

CHAIR—He did get better on the second reading, I thought—without looking at your notes, please, Brigadier Grice.

Brig. Grice—I am waiting to see how Hansard copes with that.

Senator PARRY—So am I.

CHAIR—Thank you. We may require you to come back.

[11.46 am]

LOMBARDO, Mr David, Vice-President, Bullsbrook and Chittering Chamber of Commerce Inc.

Witness was sworn—

CHAIR—Welcome, Mr Lombardo. Thank you for participating in this hearing today. The committee has received a submission from the Bullsbrook and Chittering Chamber of Commerce. Do you wish to make any amendments to the submission made to the committee?

Mr Lombardo—No.

CHAIR—I am aware of your long involvement in the chamber of commerce and the business community. If you would like to make a brief opening statement, we will then proceed to questions.

Mr Lombardo—Thank you. Firstly, I would like to commend all the officers—I will not try to remember their titles; David Stockdale and Gino Martiniello—for the professionalism they have displayed in their communications with us on this project. The chamber of commerce has raised two points. Before I touch on those, I make it very clear that we fully support the proposed redevelopment as documented, together with the C17 airlift—whether that is part of this hearing I do not know. There are two points that we raise. I will be very brief. Firstly, we read with interest the possibility of the RAAF base connecting into town water. Whilst we support that, our request is that the chamber and the local government be involved in those discussions with the water corporation in relation to the project.

The second point—and I acknowledge that there has been a response from the department which has probably addressed this second point quite adequately—is in relation to the oval parklands on the south-east section of the RAAF base which almost spearhead into the existing town centre and whether there was any scope for that boundary being slightly modified and the uses of that particular corner being shared with the local community. In closing, I reiterate the chamber's full support for the redevelopment project and hope that the powers that be endorse this sooner rather than later.

CHAIR—Thank you. Clearly, water is an issue right across the country and I am aware of the tensions along this stretch of the Great Northern Highway, and not just here but further north—it is holding back a good deal of critical infrastructure development. Knowing Defence as I do, I am sure they will be happy to continue a dialogue with you and the council, but we will have them back shortly to answer that question directly. How do you see the matter of water being resolved? Do you have some suggestions or are there particular things that might be done to alleviate some of the pressures on water in this area?

Mr Lombardo—I am not a qualified engineer. At the moment there is a limited 300-millimetre supply that comes from the south to the town. We are probably the most northern extent of the existing Water Corporation infrastructure. The concern is that that existing

infrastructure has a limited capacity. Clearly, depending on the future growth of the town and the needs of the RAAF, that supply is going to have to be increased. I am aware of the Water Corporation's preliminary plans, which involve possibly a further mains extension from south to Bullsbrook and also a new supply from the Ellenbrook region to the Bullsbrook township. I do not have a direct answer to your question other than to say that any more strain on the existing supply should take into account the future needs of this township and the future township.

CHAIR—Before you arrived, Defence did elaborate further on some of the water conservation measures that they intend to undertake. Have you had any opportunity to have any discussions yet?

Mr Lombardo—Not as yet.

CHAIR—Perhaps we can ask some questions with regard to that. I have no further questions.

Senator PARRY—In your opening submission you have indicated support. Did you receive a copy of the response that Brigadier Grice sent to the committee?

Mr Lombardo—Absolutely.

Senator PARRY—You referred to the second matter being resolved. I certainly concur that it is a matter between the base and the local community. Regarding the first matter, you did not mention in your opening submission that the discussions between the Department of Defence and WA water are continuing and that the chamber and the local government authority will be advised as to the outcomes of those discussions.

Mr Lombardo—I acknowledge that.

Senator PARRY—Thank you.

CHAIR—Senator Troeth, do you have any questions?

Senator TROETH—No. We will ask Defence further about their response but certainly I can see that you are at least happy with the issue of the parkland.

Mr Lombardo—Absolutely.

CHAIR—We will now recall representatives of the Department of Defence.

[11.53 am]

GRICE, Brigadier William Alfred, Director General Infrastructure Asset Development, Department of Defence

MARTINIELLO, Mr Gino, Project Director, Western Australia, Department of Defence

THORPE, Wing Commander Anthony, Base Commander, RAAF Base Pearce, Department of Defence

REVIE, Mr Ian Cameron, Project Manager/Contract Administrator, RAAF Base Pearce Redevelopment Stage 1, Sinclair Knight Merz Pty Ltd

CHAIR—I remind witnesses that they are still under oath. Brigadier Grice, would you like to respond? I know it is in the letter but for the *Hansard* could you respond to the comments made by Mr Lombardo?

Brig. Grice—Thank you. Firstly, as I stated 20 minutes ago, we have an emergency situation on the base. There are contamination issues with the water supply out of the bore field which are complex and may be a combination of surface contamination of the aquifer as well as issues related to our on-base infrastructure. Defence Support Western Australia has been speaking with the Western Australia Water Corporation for an emergency fix—a small 50-millimetre potable water supply to help restore potable water supplies in the short term. Defence Support Western Australia will continue to discuss with Western Australia Water Corporation and with Bullsbrook and Chittering Chamber of Commerce the long-term resolution of water supply issues. As I mentioned earlier, there are several options; permanent connection to the water supply and a refurbishment of our water purification system are two. There is a parallel investigation being undertaken by Defence Support, which will take some time, to determine the options and the best outcome for Defence and the community. We are a member of the community and we take that very seriously. We would not do anything to jeopardise the remainder of the community. We will continue with those parallel studies, and in consultation with the Western Australia Water Corporation and the chamber of commerce we will come to what I am sure will be a mutually agreeable long-term solution.

CHAIR—Thank you. That brings the hearing to a conclusion. I thank all the witnesses who have appeared before the committee today, and at the earlier private briefing on the confidential cost estimates.

Resolved (on motion by **Senator Troeth**):

That, pursuant to the power conferred by section 2(2) of the Parliamentary Papers Act 1908, this committee authorises publication of the evidence given before it and submissions presented at public hearing this day.

Committee adjourned at 11.56 am