



**ROYAL MALAYSIAN AIR FORCE BASE
BUTTERWORTH, MALAYSIA**

**AUSTRALIAN DEFENCE FORCE
FACILITIES RATIONALISATION**

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

**DEPARTMENT OF DEFENCE
CANBERRA ACT
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THE ADF PRESENCE AT RMAF BUTTERWORTH

Location and History

1. Royal Malaysian Air Force Base Butterworth (RMAF Butterworth) is located on the north-west coast of Malaysia, adjacent to the island of Penang (see Location Plan at Annex A). The base has been of strategic importance since World War II, during which it was initially occupied by Royal Air Force (RAF) and Royal Australian Air Force (RAAF) units, and subsequently by Japanese forces. RMAF Butterworth was used for RAF and RAAF activity against the Communist insurgency between 1950 and 1963 and was placed under RAAF control in 1958 as part of the Commonwealth Strategic Reserve. No 3 and No 77 Squadrons were based there during the 1960s period of confrontation with Indonesia, providing a vital level of security.
2. The base was formally transferred to the Malaysian Government in 1970 following Malaysian independence. As the RMAF was in its infancy and not in a position to fully take over an air defence role, two RAAF fighter squadrons were based at RMAF Butterworth until 1988.
3. An Australian Army Rifle Company has been stationed at RMAF Butterworth on a rotational basis since the early 1970s. While it's initial focus was protection of the base, its emphasis has shifted to training and bilateral exercises in Malaysia, Singapore and Thailand.
4. RMAF Butterworth routinely supports deployments of aircraft from the RAAF's Air Combat, Air Lift and Aerospace Operational Support Group.

Australia's Defence Objectives

5. The Government's White Paper on Defence, *Defence 2000: Our Future Defence Force*, outlines the basis for Australia's defence relationship with Malaysia. The guidance in that document remains current:

"5.37 Australia and Malaysia have a long history of military cooperation, demonstrated over the years by Australia's support of the territorial integrity of Malaysia in earlier crises and through the ongoing ADF presence at Butterworth.

A wide range of practical bilateral cooperation underlines the durability of our shared interests in regional security.

5.38 Australia's membership of the Five Power Defence Arrangements (FPDA) commits Australia, along with New Zealand and the United Kingdom, to assist Malaysia and Singapore against external aggression. Membership of the FPDA serves enduring Australian interests in the security of maritime Southeast Asia, and complements our bilateral relationships in the region.....”

6. The ADF presence and level of operational activity at RMAF Butterworth is a consequence of the FPDA. The Arrangements provided a basis for planning a response to an attack on either Malaysia or Singapore, but has increasingly provided a framework within which to advance the interoperability of member countries' armed forces. The FPDA has recently expanded its activities to counter non-conventional threats, initially focusing on maritime security. In 2006, the Ministers agreed that the FPDA would explore avenues for regional humanitarian assistance and disaster relief.

7. Established in 1992, the Malaysia-Australia Joint Defence Program provides a framework for defence activities from high-level policy talks to individual training programs. A Status of Forces Agreement, which took effect in 1999, set up standard conditions for the presence of visiting forces of either country on issues such as jurisdiction, claims, immigration, and customs.

8. The Defence International Engagement Plan 2006-2009 reaffirms Australia's commitment to the FPDA and underpins a commitment to a continuing ADF presence at RMAF Butterworth at the current level of manning.

9. More information on Australia's relations with Malaysia is contained in Defence's submission to the Inquiry into Australia's Relations with Malaysia by the Joint Standing Committee on Foreign Affairs, Defence and Trade, held in October 2006.

Operations and Deployments

10. The ADF participates in and supports a range of operational activity from RMAF Butterworth, including the rotational deployments of Rifle Company Butterworth, regular deployments of Maritime Patrol Aircraft, and involvement in several multinational exercises each year.

11. Unscheduled peaks in aircraft activity generate heavy demands on cargo handling, meals and accommodation at RMAF Butterworth, such as occurred after the 2004 tsunami.

12. While future ADF activities at RMAF Butterworth are likely to be influenced by unforeseeable events such as the tsunami of 2004, planning must ensure a capacity to respond to credible contingencies.

Roles of ADF Units at RMAF Butterworth

13. The ADF elements based at RMAF Butterworth are shown in Table 1.

Table 1

ADF Unit	Role	Composition
324 Combat Support Squadron	Provides administrative, health, domestic, information, logistic and security police services to ADF personnel based at deployed to, and transiting RMAF Butterworth.	34 RAAF, 1 Australian Public Service and 75 locally employed civilians
92 Wing Detachment A	Provides operational planning, execution and review support for RAAF Surveillance and Response Group deployments.	6 RAAF personnel
Land Command Liaison Section	Provides domestic, administrative and logistic support and continuity to the rotations of Rifle Company Butterworth.	6 Australian Army personnel
Rifle Company Butterworth	Training and exercises with Malaysian and Singaporean armies.	120 Australian Army personnel

14. The number of ADF personnel deployed, on exercises, or transiting through RMAF Butterworth can total up to 700.

Facilities Allocated to the ADF

15. The arrangement for the ADF's use of facilities at RMAF Butterworth is set out in a 1988 exchange of letters between the Malaysian and Australian Ministers for Defence. The essential features of the agreement are:

- the nomination of facilities to be made available for ADF;
- the arrangements for payment by Australia for use of the facilities, repairs, maintenance and refurbishments;
- the requirement to seek consent from the Malaysian Government for the construction of new facilities or the altering existing facilities used by the ADF;

- the arrangement for payment for the provision of infrastructure services; and
- the agreement to transfer all ADF facilities to the Malaysian Government when the ADF withdraws from the base.

Planning for ADF Facilities

16. The RMAF has not developed a master plan for the base. It has carried out a number of redevelopment works based largely on the extant zoning of existing facilities and there is no indication that the RMAF will seek to vary the sites allocated to the ADF under the 1988 agreement.

17. Based on the expectation that there will be no change in the current level of ADF activity at RMAF Butterworth, Defence has prepared a Development Plan for the ADF facilities. This plan is at Annex B. The key features of this plan are that it:

- confirms the appropriateness of the location of the key flight line, administrative, logistic and domestic facilities currently in use;
- distinguishes between those facilities suitable for retention, those which require refurbishment, and those needing replacement; and
- identifies those facilities which, subject to approval of this proposal, may be returned to the RMAF.

IDENTIFICATION OF THE NEED

Project Objectives

18. This statement of evidence presents a proposal for the replacement and refurbishment of ADF facilities at RMAF Butterworth. The project has two principal objectives:

- to provide fit for purpose working and living accommodation for ADF personnel by addressing the current deficiencies in ADF working and transit living accommodation, in terms of compliance with legislative requirements, eg Occupational Health and Safety (OH&S) and the Building Code of Australia, thereby improving the ADF's capacity to meet its responsibilities to its personnel; and
- to rationalise ADF facilities on the base, improve the functionality and security of the facilities the ADF is to use into the future, and provide the opportunity to return some facilities to the RMAF.

19. Collectively, the works proposed will improve the capacity of the resident ADF units to provide the support required by ADF elements deployed to and operating from or through RMAF Butterworth.

The Need for the Work

20. The facilities allocated to the ADF under the 1988 arrangements and their functions are listed at Annex C and identified on the plan at Annex B. These facilities were built in the 1940s and 1950s. Some of them, in particular the flight-line aircraft hangars and the recently upgraded fuel farm, are in good condition, and are suitable for continued use under normal maintenance arrangements.

21. Facilities in the administrative, logistic, domestic and domestic support categories however, have deteriorated over the years to inefficient, insecure, and in some cases unsafe levels. Some facilities have been abandoned and temporary accommodation arrangements have been made. The initial building allocations have resulted in an inefficient dispersal of RAAF administrative functions among a variety of buildings. Materials are not appropriately fire rated in some cases, asbestos roofing is in use on some buildings, and from time to time sewer drains overflow inside accommodation

ablution blocks. While a range of repairs and improvements have been carried out over the years in attempts to comply with Australian OH&S and Building Code standards, significant improvements are now required to meet those standards. In the case of the administrative buildings, replacement is proposed.

Administrative Facilities

22. **324 Combat Support Squadron Headquarters.** The headquarters is currently operating from temporary accommodation in an aircraft hangar (Hangar 50). Relocation was required following the structural failure of the former headquarters (Building 57), as a consequence of age, the prevailing tropical conditions and a significant termite problem. The dispersal of the health services, communications centre and Private Automatic Branch Exchange (PABX) functions in buildings away from the headquarters generates inefficiencies. The collocation of these functions would facilitate the return of Buildings 58E and 54 (part) to the RMAF.

23. **Land Command Liaison Section and Rifle Company (LCLS) Butterworth.** The partial structural failure of the current LCLS headquarters (Building 55) has reduced the office and lecture room capacity in the building.

24. **92 Wing Detachment A.** The Detachment currently uses Building 56, which is suffering from structural deficiencies and, in common with the other facilities of its age on the base, has inadequate environmental control, lighting, data services and acoustic insulation.

Logistic Facilities

25. **Army Quartermaster Stores.** These buildings, Building 55E and 55F, have deteriorated over the years. They do not provide suitable office accommodation, nor adequate and efficient racking and shelving for stores. A weatherproof "Receipts and Issues" area, improved and expanded pallet racking areas, and some increase in air conditioned office spaces is needed.

26. While the building fabric is in poor condition, and the asbestos roofing requires replacement, the buildings are structurally sound, and can be cost effectively upgraded to meet requirements.

27. **Armoury.** The RAAF and Army currently have separate weapons storage arrangements. Army's armoury requires a compliance waiver and permanent guarding of the weapons which is an inefficient use of scarce personnel. A new armoury is required which is designed to meet ADF small arms security standards and consolidates the storage and management of small arms for all ADF elements on the base.

28. **Vehicle Compound.** Most ADF vehicles on the base are commercial vehicles which are serviced by local contractors. The on-base facilities used for this purpose and the repair of other military vehicles have significant deficiencies against the Building Code of Australia and OH&S standards. The main needs are the:

- replacement of asbestos and other roofing;
- installation of improved lighting, power, ventilation and fire protection;
- replacement of in-ground service pits with a vehicle hoist;
- laying of new concrete flooring;
- provision of improved office, stores, amenities and battery charging facilities;
and
- remediation of an area contaminated with waste lubricants.

Domestic Facilities

29. **All-Ranks Mess.** The existing facility (Building 40) is in reasonable condition, and a number of improvements have been carried out to upgrade the kitchen and dining room functionality and to comply with OH&S requirements. The following additional requirements have been identified to address demand, functionality and Defence standards:

- an improved capacity to handle surge dining requirements;
- a larger, more effective ration and bedding storage;
- an appropriate garbage storage facilities;
- a new female toilet facility;
- a new water filtration system; and
- other general refurbishments, including, relocation of ancillary equipment and re-painting.

30. **Transit Accommodation.** Permanent ADF staff at RMAF Butterworth live at Georgetown on Penang Island while deployed personnel, including the members of Rifle Company Butterworth, live in transit accommodation on the base. Some improvements have been carried out to the transit accommodation in recent years (mainly air conditioning, and re-roofing). The on-base accommodation requires fire rated ceilings with extensions and reconfiguration changes to meet OH&S requirements. Additional accommodation is provided for Officers and Senior Non-Commissioned Officers. There are security and safety risks arising from the use of the Non-Commissioned Officers' and Officers' accommodation which are located outside the secure perimeter of the base. The changes will allow for the accommodation of Officers and Senior Non-Commissioned Officers within the base secure area and provide an integrated accommodation solution to meet the needs of the Rifle Company.

31. **Sewage Treatment.** The RMAF Butterworth sewage treatment plant is inoperative. From time to time, sewerage over-flows inside the accommodation ablution area creating a health hazard and unnecessary inconvenience for those affected. Upgrading of the base system is planned by the RMAF, but the timing and extent of work has not been confirmed.

Training and Physical Fitness Facilities

32. **Gymnasium.** Personnel based at or deployed to RMAF Butterworth currently use a storage shed in the vehicle compound as a gymnasium. It can accommodate only some of the usual gymnasium functions. Because of its location, the building would be more effectively used to meet transport administration requirements.

33. The gymnasium requirements range from small areas for cardio and weights training to facilities to allow undercover unit exercising and training. A capacity to handle groups of up to 30 (i.e. a platoon) is desirable.

34. **Outdoor Fitness Training.** There is a requirement for outdoor, all-weather training facilities, preferably close to the Army and RAAF allocated transit accommodation buildings.

Description of Proposal

35. To address the deficiencies identified in the ADF facilities at RMAF Butterworth, Defence has examined options for each functional category and has developed preferred solutions, which are outlined as follows:

- the provision of three new headquarters buildings for RAAF and Australian Army elements based at RMAF Butterworth, to meet current standards of functionality, security, and OH&S, and to increase the operational effectiveness of the units concerned;
 - three existing buildings will be demolished to enable the construction of three new headquarters buildings on the existing building sites. These sites are identified at Annex B.
- the refurbishment and upgrading of existing transit accommodation, messing buildings, stores, vehicle workshops and ancillary facilities, to ensure compliance with building codes and OH&S requirements, to increase capability, and replace non-functional services;
 - the preferred solution involves a range of renovations, improvements to services, some building extensions, a new package sewage treatment plant, and general repairs and repainting.
- the construction of a new combined armoury adjoining the Rifle Company Butterworth (RCB) Quartermaster Store (Building 55F).

Options and Reasons for Adopting the Proposed Course of Action

36. The ADF is committed to a continuing presence at RMAF Butterworth at the current levels of manning and operational activity. The feasible options for the provision of appropriate facilities to support that commitment reduce to either, replacing all facilities or a mix of replacement and refurbishment. After careful consideration of the options, a mix of replacement and refurbishment was considered to be the most viable and cost effective. New construction has been restricted to the replacement of facilities which have been condemned, are uneconomical to upgrade or extend, or pose health risks to ADF personnel. For the remaining facilities, refurbishment was considered to be suitable.

37. Collocation of all administrative and Headquarters elements on one site was considered in view of the economies that may be accrued. While this may be feasible on the largest site, (Site A), issues which were taken into account were:

- A single large building accommodating all ADF requirements on one site would be inconsistent with the heritage and landscaping of the precinct. It would dominate other nearby buildings and was considered to be inappropriate given ADF's role and status on the base.
- The operating advantages inherent with 92 Wing Detachment A and Army elements being close to their functional areas, i.e. Hangar 51, Hangar 50, the Quartermaster stores and armoury respectively.

38. Refurbishment of the existing administrative buildings was considered but rejected because:

- the poor condition of the existing structures meant that there would be little difference in cost between refurbishment and replacement;
- refurbishment would limit the functionality of outcomes, in view of the shape, size and layout of existing buildings.

39. The conclusion from this consideration was that the optimum approach would be to construct new facilities on each of the three available sites. This option would keep the ADF facilities in proportion to its presence within RMAF Butterworth while meeting the disparate needs of the units.

Environmental Impact Assessment

40. An environmental assessment of the project has determined that there are no environmental impacts which would require referral under the "Environment Protection and Biodiversity Conservation Act 1999". An Environmental Clearance Certificate has been issued by Defence and the project will be managed according to a Construction Environment Management Plan which will be required of the construction contractor.

Heritage Considerations

41. A Heritage Impact Assessment in relation to the proposed new headquarters buildings was undertaken in 2005. It concluded that the proposed demolition of the existing structures would not fundamentally affect any of the identified Commonwealth heritage values of RMAF Butterworth and recommended that a photographic record be

taken during the course of the project. The proposed new structures are being designed in sympathy with the historic and aesthetic values of the site. Extensions of existing facilities will be designed and constructed so as to match the style and finish of existing buildings.

Consultation with Stakeholders

42. The 1988 Ministerial agreement for ADF use of facilities at RMAF Butterworth requires Malaysian Government consent before the construction of new facilities or the alteration of existing facilities. Consent was provided on the 28th March 2007.

43. Authorities consulted included the:

- Malaysian Secretary General of Defence;
- Malaysian Ministry of Defence officials;
- Malaysian Military representatives on RMAF Butterworth;
- Malaysian Defence Attaché, Malaysian High Commission, Canberra;
- Australian Department of Foreign Affairs and Trade;
- Australian High Commission to Malaysia;
- Malaysian Industry Development Authority (Malaysian Consulate, Sydney); and
- Australian Greenhouse Office.

Revenue

44. As the proposed facilities will be constructed for use by the ADF, there are no revenue implications associated with this project.

TECHNICAL INFORMATION

Project Location

45. The work proposed in this submission will be carried out on the RMAF Base at Butterworth which is located on the north western coast of Malaysia. See Location Plan at Annex A.

Project Scope

46. The locations of the proposed work are identified on the ADF Facilities Development Plan at Annex B. Floor plans, typical elevations and sections of the proposed new facilities and representative sketches of the proposed refurbishments are at Annex D.

47. The following works are proposed to meet the needs of the sponsors:

- **324 Combat Support Squadron Headquarters – Site A.** Demolition of existing Buildings 57 and 57A and the construction of new facilities co-located on that site. The development of three adjacent structures on that site include: a Health Services facility (630m²), which requires particular construction and safety standards, the main administration building, which will collocate the Headquarters, Personnel Services and Information Services functions (1,310m²), and a Security Police amenities facilities (385m²).
- **92 Wing Detachment A Headquarters – Site B.** Demolition of existing Buildings 56 and 56A and the construction of a new facility of some 638m² on that site. The site is immediately to the west of the hangar and parking apron which accommodates deployed aircraft. It will provide facilities for operations, intelligence, photography and mission preparation, as well as administration functions.
- **Land Command Liaison Section and Rifle Company Butterworth Headquarters – Site C.** Demolition of existing Building 55 and construction of a new facility of some 1,408m² on that site. The new building will accommodate the functions carried out by the resident Liaison Section and the Rifle Company. It will provide facilities for training, briefing, planning, communications and administration.

- **Army Quartermaster Stores.** Upgrading of existing Buildings 55E and 55F to provide improved storage, receipt and dispatch arrangements.
- **Armoury.** Construction of a new facility of some 128m², to be integrated with the upgraded Army Quartermaster-stores. The new armoury will consolidate the storage and management of all ADF small arms on the base.
- **Vehicle Compound.** The scope includes upgrading lighting, power, ventilation, fire detection and protection in the workshop area, the filling-in of servicing pits, provision of new concrete floors to workshop areas, installation of a new 2-tonne vehicle hoist and the remediation of an area of oil contaminated ground. Asbestos roofs will be replaced with colorbond metal roofing and the office and amenities areas will be refurbished.
- **All-Ranks Mess.** Work includes additions and alterations to the existing mess to provide a new ration store, bedding store, female ablutions and garbage handling arrangements. The old ration store will be refurbished to increase surge dining capacity.
- **Transit Accommodation.** Additions and alterations to existing accommodation buildings to improve amenity and standards for up to 332 transit personnel.
- **Sewage Treatment Plant.** Installation of a 750 person package sewage treatment plant which services ADF accommodation, messing and vehicle compound facilities is proposed.
- **Gymnasium.** The scope of work includes re-roofing and reconfiguration of Buildings 41 and 42F to provide adequate physical fitness facilities and toilets. Enclosure of part of the veranda of Building 41 for storage of sporting equipment will also be undertaken.
- **Outdoor Fitness Training Shelters.** Work includes the construction of seven open shelters adjacent to the transit accommodation, to provide an area suitable for all weather fitness training.

Details of Site Selection

48. The siting of ADF facilities is specified in arrangements agreed in 1988. The proposed facilities will be located on existing ADF building sites.

Site Description

49. RMAF Butterworth is on the North West coast of Malaysia, opposite the island of Penang. The primary runway runs north-south, parallel to the shoreline, and the western boundary of the base is only some two hundred metres from the shoreline. The main built up area of the base, including the ADF facilities, lies between the main runway and the western boundary. The topography is generally flat, with a slight grading towards the sea.

Zoning and Approvals

50. The site is an RMAF base. Zoning and approval issues will be addressed between the ADF and Malaysian Governments.

Land Acquisition

51. No land acquisition is required.

Applicable Codes and Standards

52. Subject to the limitations imposed by the designs of the existing structures which are to be refurbished, it is intended that the design of both new and upgraded facilities will conform to the relevant sections of appropriate codes and standards, including:

- the Building Code of Australia,
- the Defence Manual of Fire Protection Engineering,
- the Defence Safety Manuals,
- applicable OH&S standards,
- ADF standards for physical and electronic security, and
- relevant Malaysian building statutes, codes and standards.

Planning and Design Issues.

53. **Design Philosophy.** The design philosophy adopted for the new buildings ensures that the:

- buildings operate in a manner reflecting the purposes for which they were designed;

- designs provide flexibility by using steel framed structural systems and lightweight internal partitions in suitable areas to provide open office spaces and the flexibility to rearrange the offices at minimal cost;
- designs are sympathetic with the colonial style used in tropical climates, a style which has been commonly used on the base;
- designs respond to local climatic conditions;
- siting, design, structure, and servicing will provide the flexibility for future expansion (noting that no future expansion is anticipated or planned);
- selection of materials takes life cycle costs into account; and
- design incorporates environmentally sustainable features where practicable.

54. **Architectural.** The architectural style of the new buildings will be a reflection of the current building style and fabric used on the base, and has been selected for its simplicity in construction. Buildings will be in rendered block work with metal clad roofing and aluminium framed windows.

55. New buildings will be low-rise, braced steel-framed structures with reinforced concrete floor slabs. Existing and past endemic termite infestation has influenced the choice of materials, which avoids the use of timber. Perimeter walls will generally be solid masonry or masonry veneer construction for enhanced security. Areas which perform functions requiring extra security will be enclosed with reinforced concrete floors, walls and ceilings.

56. The structural form of buildings being refurbished will not be changed. Existing corrugated asbestos and tiled roofing will be replaced with pre-coloured zinc/aluminium steel sheeting, with insulation and vapour barrier treatment where air conditioning is to be installed.

57. **Mechanical.** The new buildings will be served by air-cooled direct expansion refrigeration packaged air conditioning units or split systems. Telephone switching, uninterruptible power supply and high security server areas will be provided with individual wall mounted split, packaged units for 24 hours operation. For secure network server areas, wall mounted units will be provided, with each unit capable of meeting 75% of the total cooling requirements as backup. Small, split systems will be used in the accommodation buildings.

58. **Water Supply.** Water from the existing supply system on the base is below Australian potable water standards. Reverse osmosis water treatment will be used to purify water for personal use. New filtration and purification systems will be installed in the sleeping accommodation area and hot water will be supplied from roof mounted solar systems. Untreated water will be used for toilet flushing, mechanical plant and garden watering.

59. **Sewerage.** The precinct is served by a network of sewer drainage systems with ejector pumps used as a means of conveying sewage across the base. The new headquarters buildings will be connected by gravity feed sewer lines to collection pits and pumping to ejector stations. To optimise integration of new ADF sewage work with the proposed RMAF base upgrade close liaison will occur between the ADF and Malaysian authorities. Installation of the new ADF treatment system to serve the messing and accommodation area will involve cutting and sealing existing sewer lines, installation of new mains and, the supply and installation of a packaged 750 person capacity sewer effluent treatment plant including aeration modules, pumps and dosing system.

60. **Electrical.** New underground mains power will be provided to each of the new headquarters. Surge protection will be provided on the main switchboards to mitigate the effects of lightning strikes.

61. Standby emergency power generators and an uninterrupted power supply will be provided for the Defence Restricted, Secret and Top Secret Network communications rooms.

62. **Lightning Protection.** An integrated Faraday Cage utilising the buildings' structural elements will provide lightning protection for new buildings.

Acoustics

63. Construction of the new buildings will accord with the indoor design sound levels appropriate to aircraft noise, detailed within AS2021-2000. Building plant and services noise and road traffic noise will be within the requirements of the applicable Australian Standards.

64. The 2004 Australia Noise Exposure Forecast for RMAF Butterworth shows that the transit living accommodation facilities are in the 20 to 30 zonal band. Occupation will be of short duration (less than one month continuous) by personnel transiting RMAF Butterworth. Attenuation will be provided based on AS2021-2000 and current industry best practices.

Water and Energy Conservation Measures

65. The proposed design complies with the Commonwealth Energy Policy - Energy Efficiency in Government Operations (EEGO) Policy. Following consultation with the Australian Greenhouse Office, the design of the new buildings will aim to achieve a 20% improvement on the minimum energy efficiency performance requirements for a Class 5 building using either one of the Verification Methods described in Volume One of the BCA. Design criteria will also reflect:

- a maximum lighting intensity of 10 W/m²;
- the use of zoned lighting controls with zones every 100 m²; and
- separate digital metering of tenancy, central services and computer centres.

66. Environmentally sustainable design features which have been considered in the design of the new facilities include:

- decreasing energy usage through passive design, energy efficient building systems and lighting, smart equipment selection, and alternative energy sources, with consequent reductions in greenhouse gas emissions;
- conserving water and reducing stormwater/sewage outflows through efficient tap ware selection and swales;
- selection of materials to minimise off-gassing, reduce natural resource consumption and minimise waste; and
- maximising the potential for day lighting to improve indoor environment quality, and providing user control and management of the indoor environment.

Master Planning

67. In the absence of a RMAF master plan for the base, an ADF Facilities Development Plan has been prepared which is the basis for the rationalisation of ADF

facilities proposed in this submission. This plan is at Annex B. Discussion at paragraphs 16 and 17 also refer to master planning issues at RMAF Butterworth.

Earlier and Future Works.

68. Earlier ADF works have largely been repairs and maintenance. Recently, an upgrading of the aviation fuel farm has been undertaken, and a range of repair and rehabilitation works have been carried out on accommodation buildings and the combined mess. These works were predominantly related to the age and condition of the facilities, and in the case of the combined mess, followed its partial closure following OH&S concerns.

69. Resurfacing of the aircraft hard standing used by the ADF is planned during 2007. This is expected to cost in the order of A\$1m. This work is required by the RAAF to be completed before the commencement of this project. No other major works are planned.

Access for the Disabled

70. Access and facilities for disabled persons will be provided in the new headquarters buildings in accordance with the Building Code of Australia. It is impracticable to meet these standards in the existing messing and sleeping quarters. Personnel using the mess and accommodation quarters are members of the ADF and due to the condition of their employment, disabled persons access is not required.

Child Care

71. Permanent staff reside off-base in the Penang area. Families of ADF members make their own arrangements for child care on Penang Island. There is no change to personnel numbers relating to this project.

Fire Protection

72. All construction and fire protection requirements will, as a minimum, be in accordance with the provisions of the Building Code of Australia (BCA), the Defence Manual of Fire Protection Engineering (MFPE) and all other applicable Codes and Standards. The MFPE details Defence fire protection policy for asset protection and building function protection.

73. Defence will require certification from a suitably qualified and accredited building surveyor that the design and construction meet the requirements of the BCA, the MFPE, relevant codes and standards and any additional State or Local Government and Malaysian requirements.

74. The local Malaysian Fire Brigade will be invited to comment on the project, visit the site and offer comment throughout the construction phase to ensure that the brigade's operational requirements are met.

75. Any recommended departures from the BCA requirements in relation to the project will be technically assessed by Defence specialist fire protection staff and where the scope of the departure warrants, by a suitably qualified and experienced fire engineer. Agreed departures (ensuring an equivalent or higher level of protection requirements than BCA requirements) will require written approval from the Defence delegate.

76. Successful tenderers will be required to produce a Quality Assurance Plan to clearly show how BCA, Australian Standards, Defence and any additional Malaysian Defence requirements in relation to fire protection/fire safety will be met and the required standards for construction/installation maintained.

Security

77. New buildings will be constructed to a physical security level agreed with ASIO to avoid the need for perimeter fences around each site. Security will incorporate fixed glazing, solid doors, external walls in masonry/brick veneer to underside of roof, metal roof sheeting with secure fixing, and F81 mesh below to provide additional intruder delay. No external unsecured openings will be incorporated in the design. The main headquarters buildings will be provided with an appropriate high security intruder alarm system and a card based electronic access control system. Close Circuit Television monitoring of the hangars will be undertaken from the new Communications and Information Systems Centre.

Communications.

78. The communications objective is to provide a secure system to new buildings to a physical security level of "Secret". The existing Communications and Information Systems Centre in the Control Tower will be relocated to the new 324 Combat Support

Squadron Headquarters, along with the relocated ADF PABX. Within buildings, data services will be provided to work stations for secure network services.

79. Microwave connections from the Control Tower to several remote locations will be relocated to the central communications building.

Occupational, Health and Safety

80. A key requirement of the project is to redress current OH&S deficiencies. New construction will remedy the structural deficiencies in the administrative areas. Hazardous electrical wiring in the workshops will be replaced, inadequately fire rated materials in sleeping quarters will be upgraded, asbestos roofing will be replaced, and provision will be made for the augmentation of the sub-standard sewage and drainage system in the accommodation and messing zone.

Landscaping

81. A limited planting of shade trees and other landscaping in the vicinity of the transit accommodation will be undertaken. The sewage treatment plant will include a 90,000 litre tank for holding treated water before leaving the plant. It is proposed to utilise this suitably conditioned water for the irrigation of these plantings.

Asbestos and Contamination Removal

82. Contaminated soil in the vehicle compound will be removed and disposed of as directed by local authorities and in keeping with Australian and Malaysian requirements. The asbestos roofing materials in the Army Quartermaster stores and vehicle workshops will be removed and disposed of in accordance with the regulations of either the Northern Territory of Australia or Malaysia, whichever is the higher.

Furniture and Fittings

83. For the new buildings, and for the refurbished facilities where required, workstations, tables, chairs and the normal range of furniture and fittings, including for tea preparation and amenity areas will be included in the project. Much of the existing furniture is in sound condition, and where possible will be reused. Telephone, computing, printing, and other Information Communication Technology equipment in current use will be reused.

Consultation with Relevant Authorities.

84. A Managing Contractor form of delivery is planned for this project. The majority of any liaison necessary with Malaysian authorities external to the base is anticipated to be undertaken by Defence's Managing Contractor, with the Malaysian Ministry of Defence offering assistance or guidance as required.

Impact on Local Community

85. As the proposed work will be conducted on the RMAF Butterworth base, it is unlikely that there will be any adverse impact on the local community. The Managing Contractor will be responsible for ensuring compliance with local authority requirements – such as controls over construction traffic – which the project might generate in the vicinity of the base. The Managing Contractor will be required to reflect these concerns and their mitigating processes within their Construction Environmental Management Plan.

86. The proposed work is expected to benefit the local Malaysian economy through employment of construction workers and the supply of goods and services. It is estimated that up to 100 local workers will be employed over the course of the project.

Project Costs

87. **Capital Cost.** The estimated out-turn cost of the works is A\$23.6m. This includes design and construction costs, Managing Contractor and consultant fees and charges, an escalation factor through to anticipated project completion, and project contingency. GST/VAT taxes do not currently apply to construction projects in Malaysia.

88. **Operating Cost.** Under the agreement for ADF use of facilities at RMAF Butterworth, the ADF pays site lease and building rental charges. Utilities and garrison support services are charged as a share of total base costs. Repairs and maintenance for dedicated facilities are funded directly by the ADF. Operating costs are not expected to change as a result of the proposed developments.

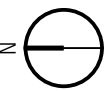
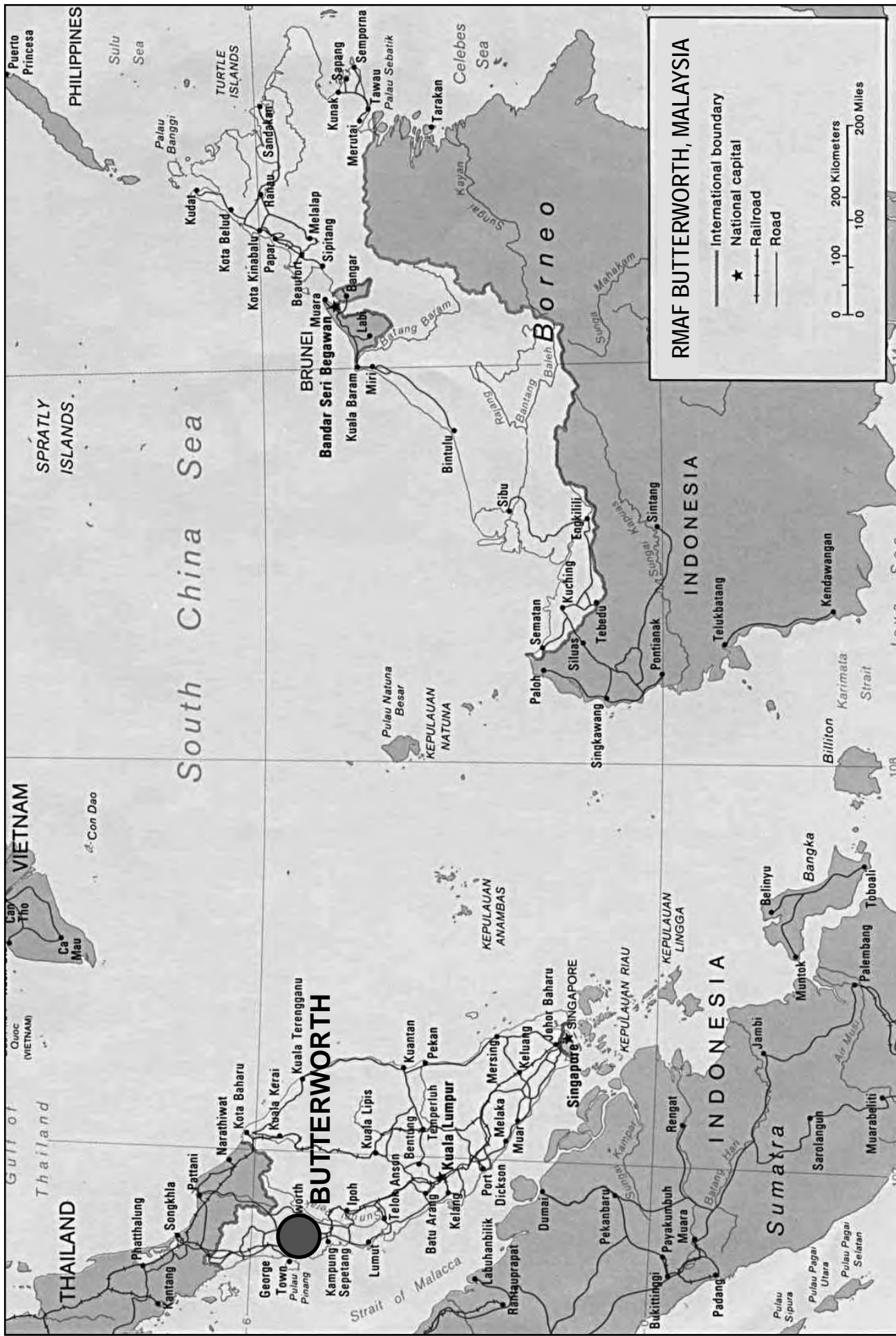
89. The facilities affected by the project will be under the exclusive control of the ADF.

Project Delivery System

90. A Managing Contractor form of delivery is currently proposed for this project. Consideration of the various delivery methods indicates that this is the preferred method of developing and managing the risks associated with an overseas project of this type. An independent on-site Project Manager is to be appointed to oversee the project, particularly with respect to cost, quality and schedule.

Project Schedule

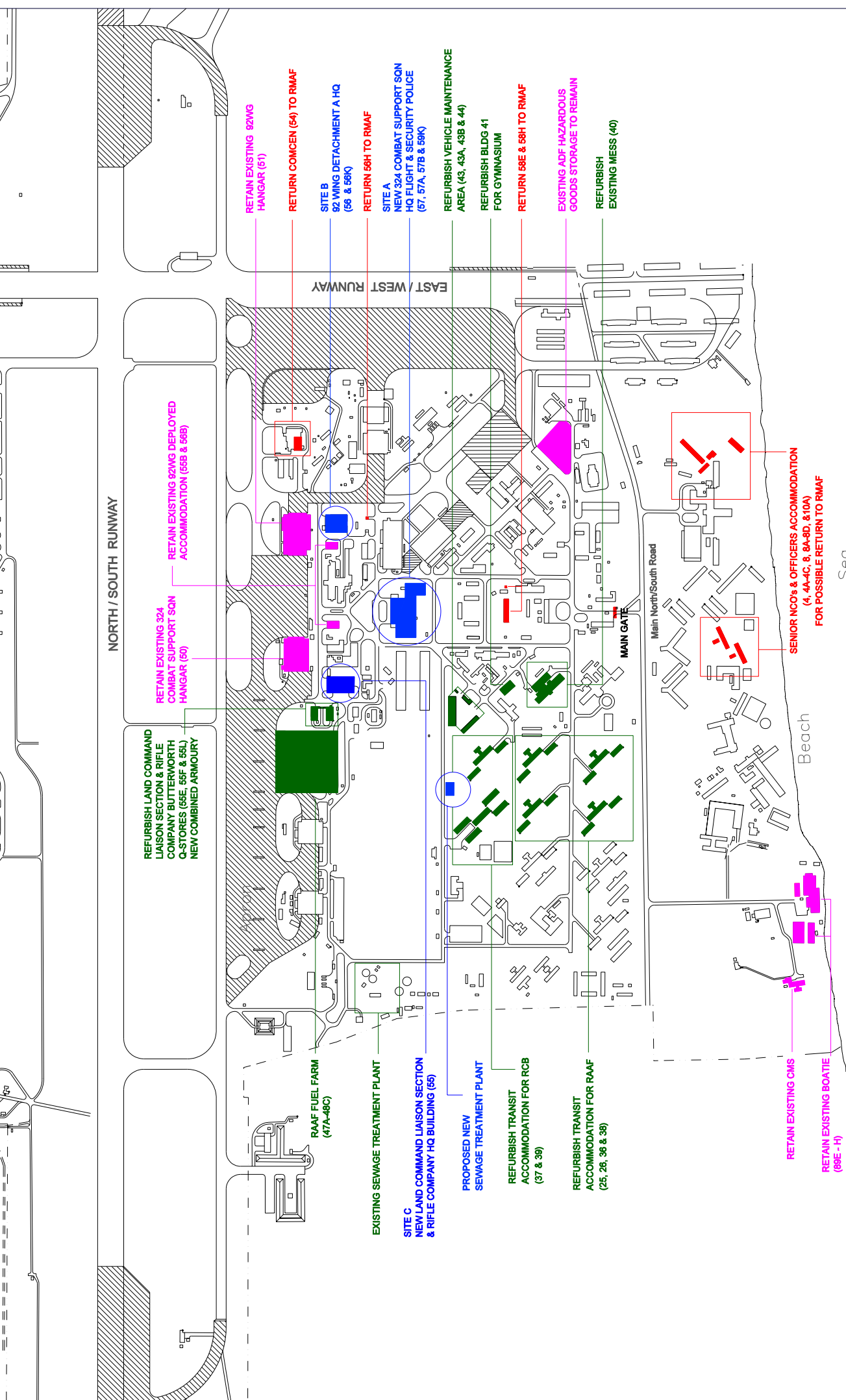
91. Subject to Parliamentary clearance, a Managing Contractor is expected to be appointed in late 2007 following a two stage tender process. Commencement of construction is anticipated in early 2008. The new build elements of the project will be phased to allow for the temporary relocation of some functions during the demolition and reconstruction period. It is expected that the refurbishment elements of the project could be undertaken concurrently. Completion of works is anticipated by December 2009. Works will be scheduled to minimise the impact of construction activity on both the ADF and RMAF operations.



ADF Facilities Rationalisation
 RMAF Butterworth, Malaysia
 February 2007

LOCATION PLAN





REFURBISH LAND COMMAND
LIAISON SECTION & RIFLE
COMPANY BUTTERWORTH
Q-STORIES (58E, 58F & 58L)
NEW COMBINED ARMOURY

RETAIN EXISTING 324
COMBAT SUPPORT SQN
HANGAR (50)

RETAIN EXISTING 92WNG
ACCOMMODATION (55B & 55B)

RAAF FUEL FARM
(47A-48C)

EXISTING SEWAGE TREATMENT PLANT

SITE C
NEW LAND COMMAND LIAISON SECTION
& RIFLE COMPANY HQ BUILDING (55)

PROPOSED NEW
SEWAGE TREATMENT PLANT

REFURBISH TRANSIT
ACCOMMODATION FOR RCB
(37 & 39)

REFURBISH TRANSIT
ACCOMMODATION FOR RAAF
(25, 26, 36 & 38)

RETAIN EXISTING CMS

RETAIN EXISTING BOATIE
(89E - H)

SENIOR NCOs & OFFICERS ACCOMMODATION
(4, 4A-4C, 6, 6A-6D, & 10A)
FOR POSSIBLE RETURN TO RMAF

RETAIN EXISTING 92WNG
HANGAR (61)

RETURN COMCEN (64) TO RMAF

SITE B
92 WING DETACHMENT A HQ
(56 & 56K)

RETURN 58H TO RMAF

SITE A
NEW 324 COMBAT SUPPORT SQN
HQ FLIGHT & SECURITY POLICE
(57, 57A, 57B & 58K)

REFURBISH VEHICLE MAINTENANCE
AREA (43, 43A, 43B & 44)

REFURBISH BLDG 41
FOR GYMNASIUM

RETURN 58E & 58H TO RMAF

EXISTING ADF HAZARDOUS
GOODS STORAGE TO REMAIN

REFURBISH
EXISTING MESS (40)

RMAF Butterworth Facilities in Current Use by the ADF

Function	Facilities
Flightline	<p>Hangars 50 and 51 and associated aircraft parking aprons. Hangar 51 is predominantly used by the regular deployments of maritime patrol aircraft, and by 92 Wing Detachment A, which supports these deployments.</p> <p>Hangar 50 is normally used by other deployed and transiting aircraft but is currently also providing temporary administrative accommodation for 324 Combat Support Squadron.</p> <p>Both hangars are suitable for continued use.</p>
Administrative	<p>Site A. Buildings 57, 57A – 324 Combat Support Squadron headquarters and administrative functions; abandoned due to roof collapse.</p> <p>Site B Buildings 56, 56B – 92 Wing Detachment A administrative, briefing functions; 324 Combat Support Squadron medical and security police.</p> <p>Buildings 54, 58E – 324 Combat Support Squadron communications centre (collocated with RMAF), PABX equipment.</p> <p>Site C Building 55 – Land Command Liaison Section and Rifle Company Butterworth headquarters, administration, training, briefing and security police functions; termite infestation has resulted in structural failures which have reduced office and lecture room capacity.</p>
Logistic	<p>Buildings 55E, 55F, 55L – Army Quartermaster stores and battery store.</p> <p>Buildings 43, 43A, 43B, 44 – vehicle maintenance functions.</p> <p>Building 41 – bedding store.</p> <p>Buildings 47A to 48C – Aviation Fuel Farm – recently upgraded.</p> <p>ADF hazardous goods storage.</p> <p>Communications Maintenance Section.</p>
Domestic	<p>Building 40 – all ranks kitchen and dining facility.</p> <p>Buildings 25, 26, 36, 37, 38, 39 – Army and RAAF transit accommodation.</p> <p>Buildings 4 to 4C and 8 to 8C, off-base buildings used for Officer and Senior NCO transit accommodation.</p> <p>Buildings 89E to 89H - ADF recreation facilities.</p> <p>The sewage treatment plant servicing domestic zone is in poor condition.</p>
Training and Physical Fitness	<p>Building 55 – includes lecture rooms for Rifle Company Butterworth.</p> <p>Building 43 – storage building in vehicle maintenance compound converted to provide limited gym facilities.</p>

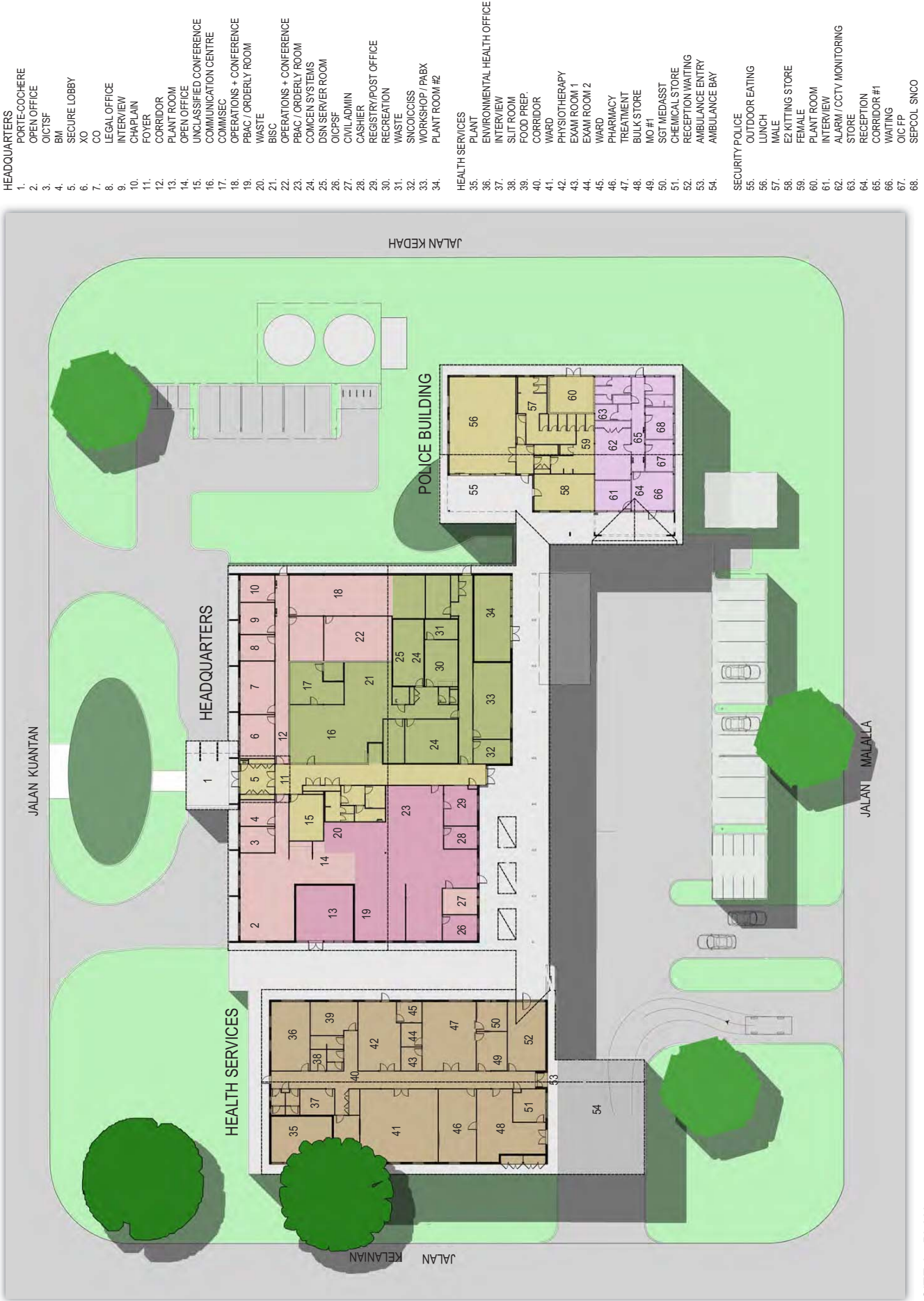
RMAF BUTTERWORTH – FLOOR PLANS AND ELEVATIONS

Drawing	Title
A-1	Floor Plan – 324 Combat Support Squadron Headquarters
A-2	Elevation – 324 Combat Support Squadron Headquarters
B-1	Floor Plan – 92 Wing Detachment A Headquarters
B-2	Elevation – 92 Wing Detachment A Headquarters
C-1	Floor Plan – Land Command Liaison Section/Rifle Company Butterworth Headquarters
C-2	Elevation – Land Command Liaison Section/Rifle Company Butterworth Headquarters
R1	Floor Plan – Accommodation Building 39
R2	Floor Plan – Building 40
R3	Floor Plan – Buildings 43A and 43B
R4	Site Plan – Buildings 43A and 43B
R5	Floor Plan – Building 55E and 55F
R6	Floor Plan – Building 41

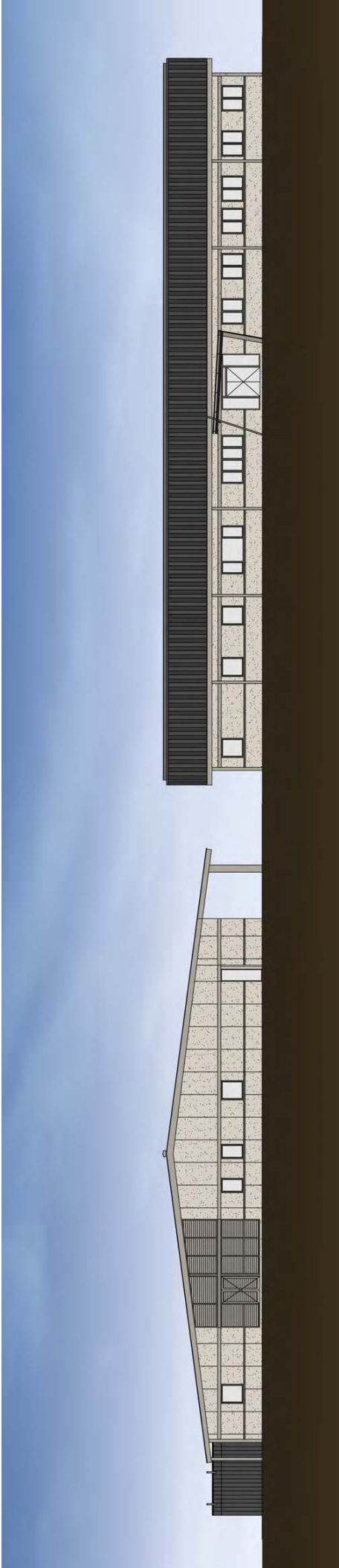


ADF Facilities Rationalisation
RMAF Butterworth, Malaysia
April 2007

SITE A - PLAN

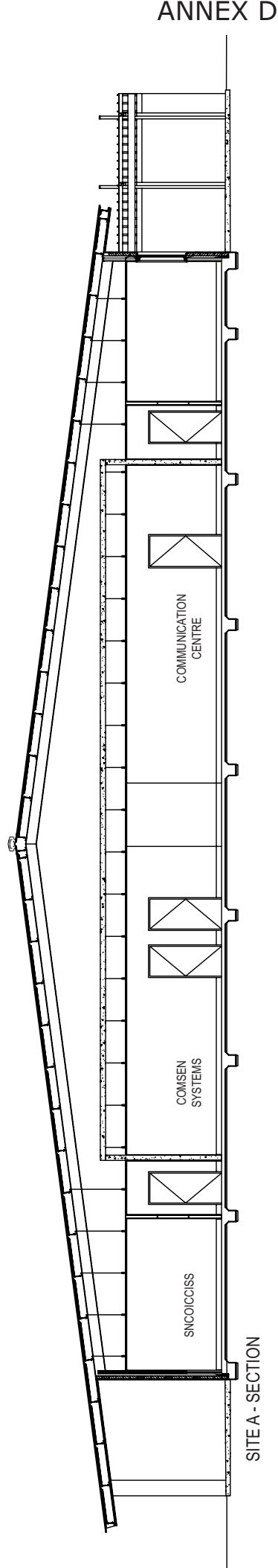


- HEADQUARTERS**
1. PORTE-COCHERE
 2. OPEN OFFICE
 3. OIC/ISF
 4. BM
 5. SECURE LOBBY
 6. XO
 7. CO
 8. LEGAL OFFICE
 9. INTERVIEW
 10. CHAPLAIN
 11. FOYER
 12. CORRIDOR
 13. PLANT ROOM
 14. OPEN OFFICE
 15. UNCLASSIFIED CONFERENCE
 16. COMMUNICATION CENTRE
 17. COMMSEC
 18. OPERATIONS + CONFERENCE
 19. PBAC / ORDERLY ROOM
 20. WASTE
 21. BISC
 22. OPERATIONS + CONFERENCE
 23. PBAC / ORDERLY ROOM
 24. COMEN SYSTEMS
 25. DSN SERVER ROOM
 26. OIC/PSF
 27. CIVIL ADMIN
 28. CASHIER
 29. REGISTRY/POST OFFICE
 30. RECREATION
 31. WASTE
 32. SNOCCOISS
 33. WORKSHOP / PABX
 34. PLANT ROOM #2
- HEALTH SERVICES**
35. PLANT
 36. ENVIRONMENTAL HEALTH OFFICE
 37. INTERVIEW
 38. SLIT ROOM
 39. FOOD PREP.
 40. CORRIDOR
 41. WARD
 42. PHYSIOTHERAPY
 43. EXAM ROOM 1
 44. EXAM ROOM 2
 45. WARD
 46. PHARMACY
 47. TREATMENT
 48. BULK STORE
 49. MO #1
 50. SGT MEDASST
 51. CHEMICAL STORE
 52. RECEPTION WAITING
 53. AMBULANCE ENTRY
 54. AMBULANCE BAY
- SECURITY POLICE**
55. OUTDOOR EATING
 56. LUNCH
 57. MALE
 58. EZ KITTING STORE
 59. FEMALE
 60. PLANT ROOM
 61. INTERVIEW
 62. ALARM / CCTV MONITORING
 63. STORE
 64. RECEPTION
 65. CORRIDOR #1
 66. WAITING
 67. OIC FP
 68. SEPCOL SNO



SITE A - ELEVATION A

SITE A - ELEVATION B

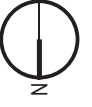


SITE A - SECTION

ANNEX D

SITE A
DRAWING A-2
324 COMBAT SUPPORT SQUADRON HEADQUARTERS,
HEALTH SERVICES FACILITIES + SECURE POLICE BUILDS

ADF Facilities Rationalisation
RMAF Butterworth, Malaysia
April 2007

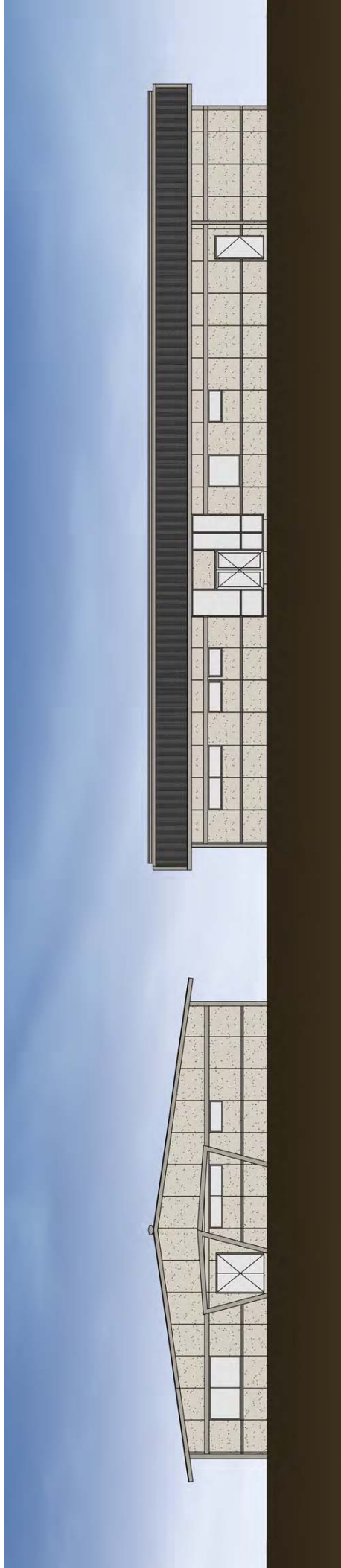


- HEADQUARTERS
- 1. ADMINISTRATION
 - 2. SECURE BRIEF
 - 3. PLANT
 - 4. CREW ROOM
 - 5. MISSION PREPARATION #1
 - 6. MISSION PREPARATION #2
 - 7. OPSO / INTEL COMP ROOM
 - 8. OPSO / INTEL COMP ROOM



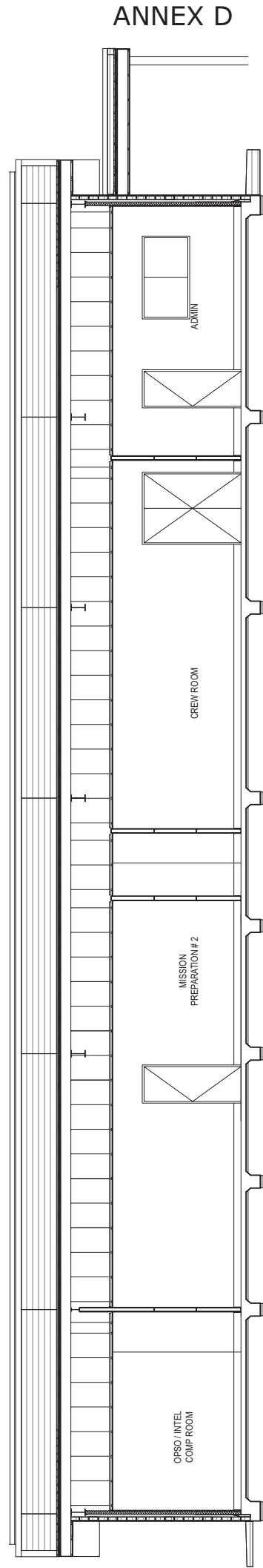
SITE B - PLAN

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RMAF Butterworth, Malaysia
April 2007



SITE B - ELEVATION A

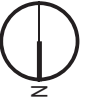
SITE B - ELEVATION B



SITE B - SECTION

SITE B
DRAWING B-2
92 WING DETACHMENT A
HEADQUARTERS

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RMAF Butterworth, Malaysia
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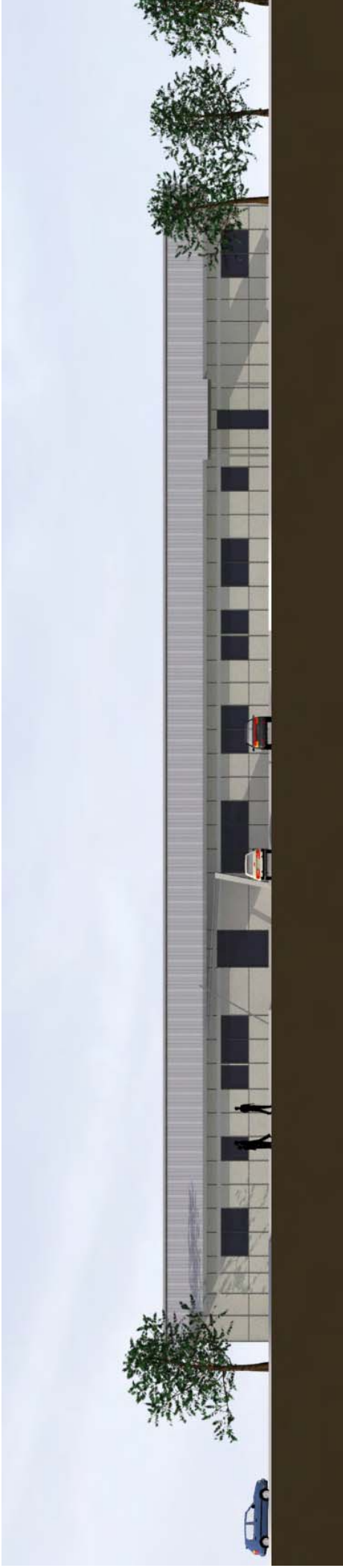
ADF Facilities Rationalisation
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- HEADQUARTERS
1. OPS CONFERENCE / BRIEFING
 2. OC OFFICE
 3. MP DET OFFICE
 4. OP-S W/O OFFICE
 5. MP SIB OFFICE
 6. ORDERLY ROOM
 7. STATIONARY STORE
 8. BREW ROOM
 9. LIBRARY
 10. SIB INTERVIEW ROOM
 11. REPO ROOM
 12. SECURE COMMS ROOM
 13. SIB EVIDENCE STORE
 14. LOBBY
 15. MALE
 16. FEMALE
 17. SIB FOUND PROP STORE
 18. ORDERLY OFFICE
 19. CORRIDOR
 20. PLANT
 21. 2IC OFFICE
 22. OC OFFICE
 23. SYNDICATE OFFICE 1
 24. TRG CELLS / PLANS OFFICE
 25. CSM OFFICE
 26. SYNDICATE OFFICE 2
 27. SECTION PREP OFFICE
 28. PLATOON OFFICE 1
 29. PLATOON OFFICE 2
 30. PLATOON OFFICE 3
 31. SYNDICATE OFFICE 3
 32. STORE
 33. TREATMENT ROOM
 34. MEDICS OFFICE
 35. GUARD DUTY ROOM
 36. OBSERVATION ROOM
 37. PLANT

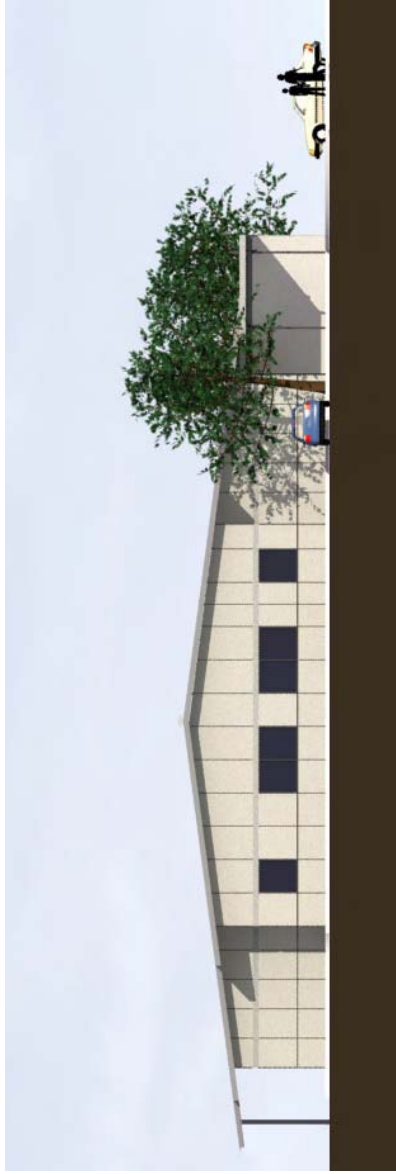


HEADQUARTERS

SITE C - PLAN

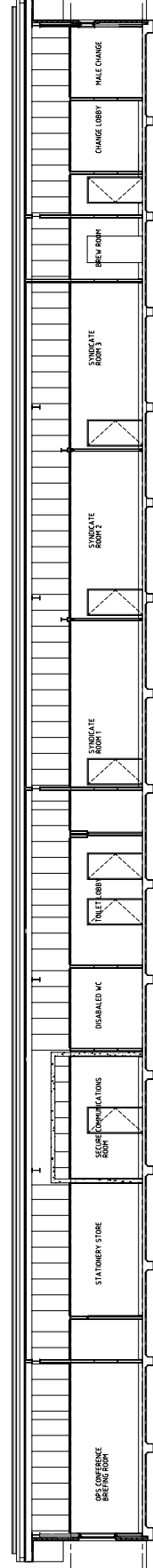


SITE C - ELEVATION A



SITE C - ELEVATION B

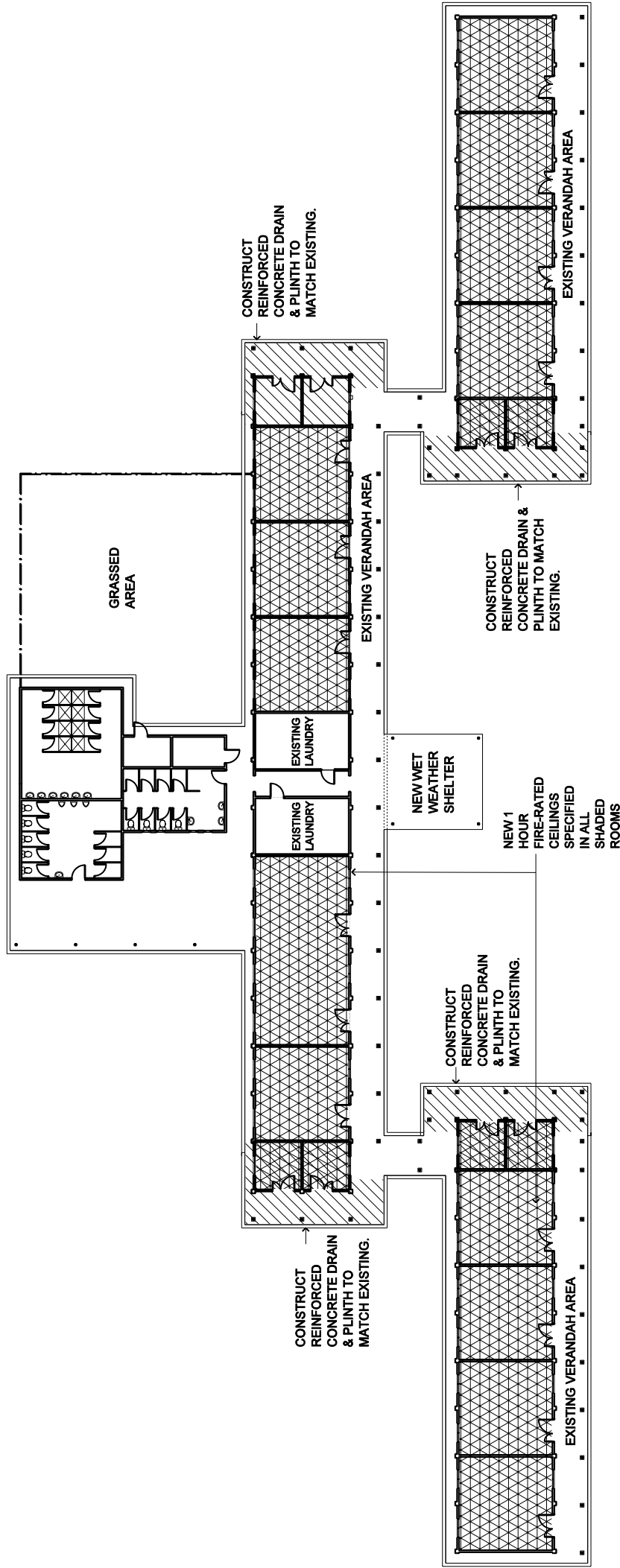
ANNEX D



SITE C - SECTION

SITE C
DRAWING C-2
LAND COMMAND LIAISON SECTION
RIFLE COMPANY BUTTERWORTH HEADQUARTERS

ADF Facilities Rationalisation
RMAF Butterworth, Malaysia
April 2007



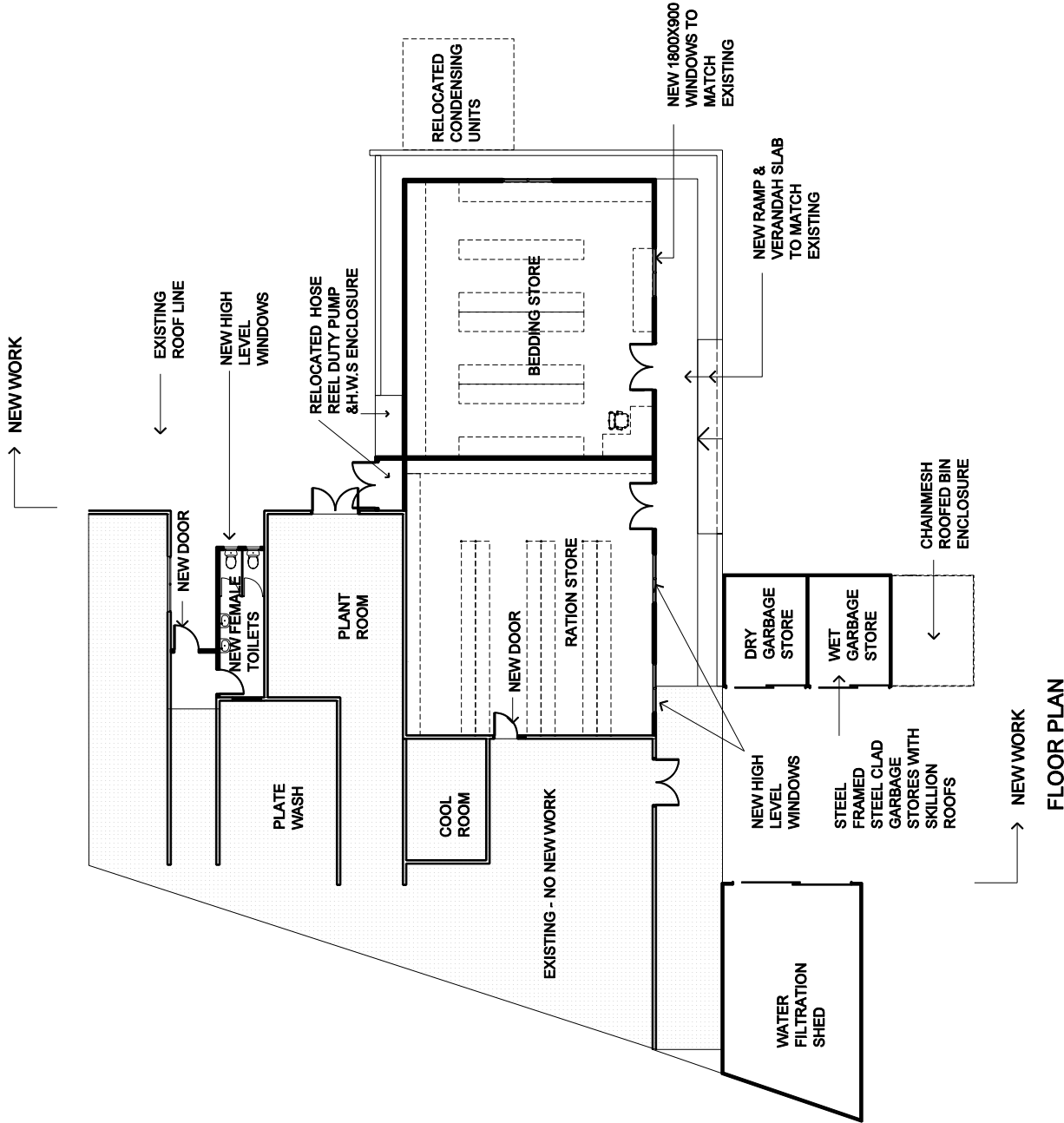
TYPICAL ACCOMMODATION PLAN

LEGEND

-  NEW FIRE RATED CEILINGS
-  BUILDING EXTENSION

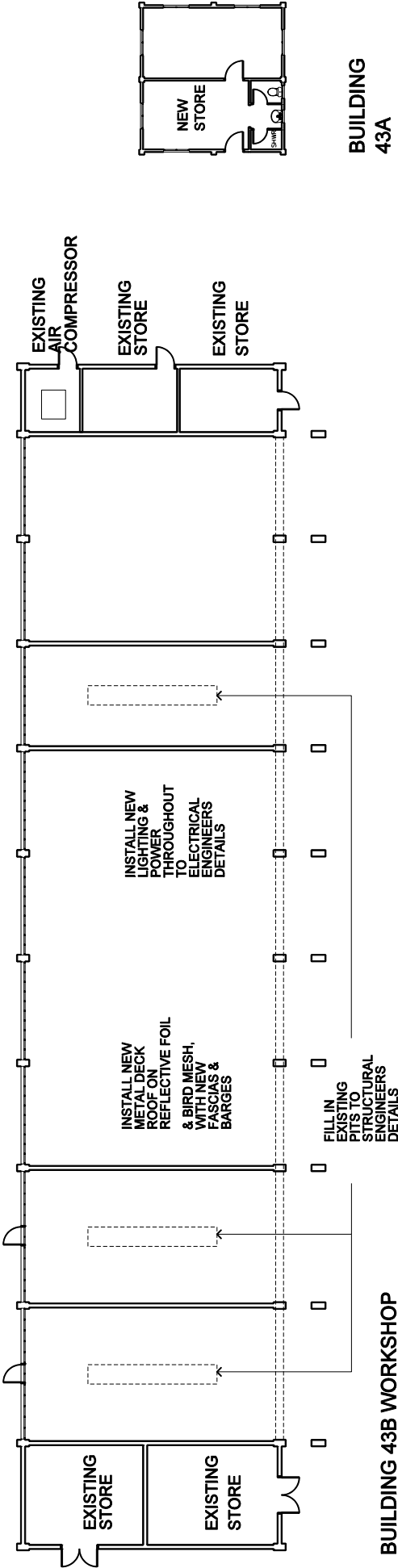
ADF Headquarters Rationalisation
 RMAF Butterworth Malaysia
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ACCOMMODATION R1
 FLOOR PLAN
 BUILDING 39



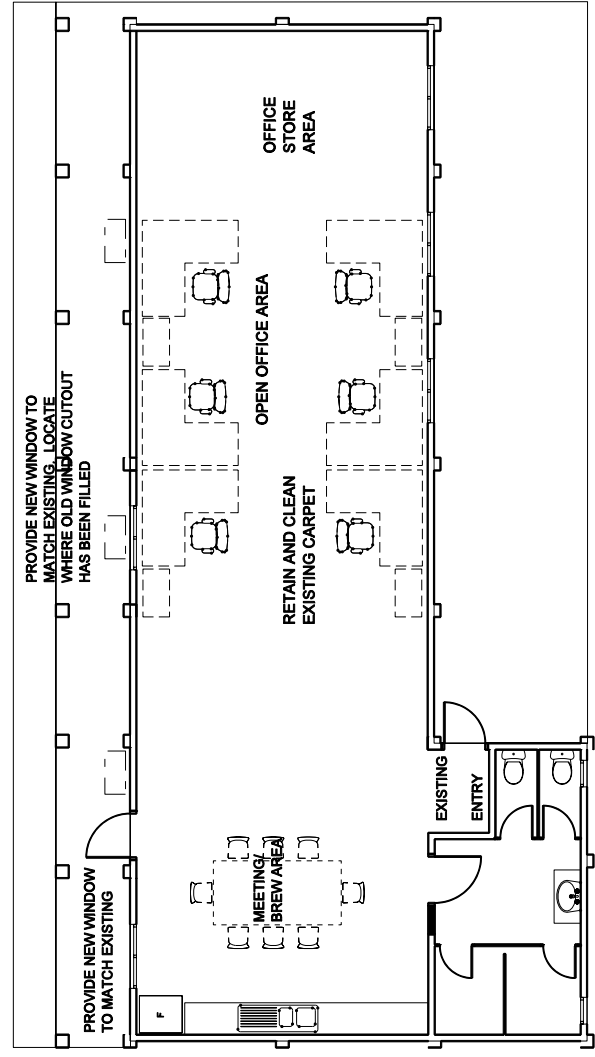
FLOOR PLAN

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BUILDING 43B WORKSHOP

BUILDING 43A

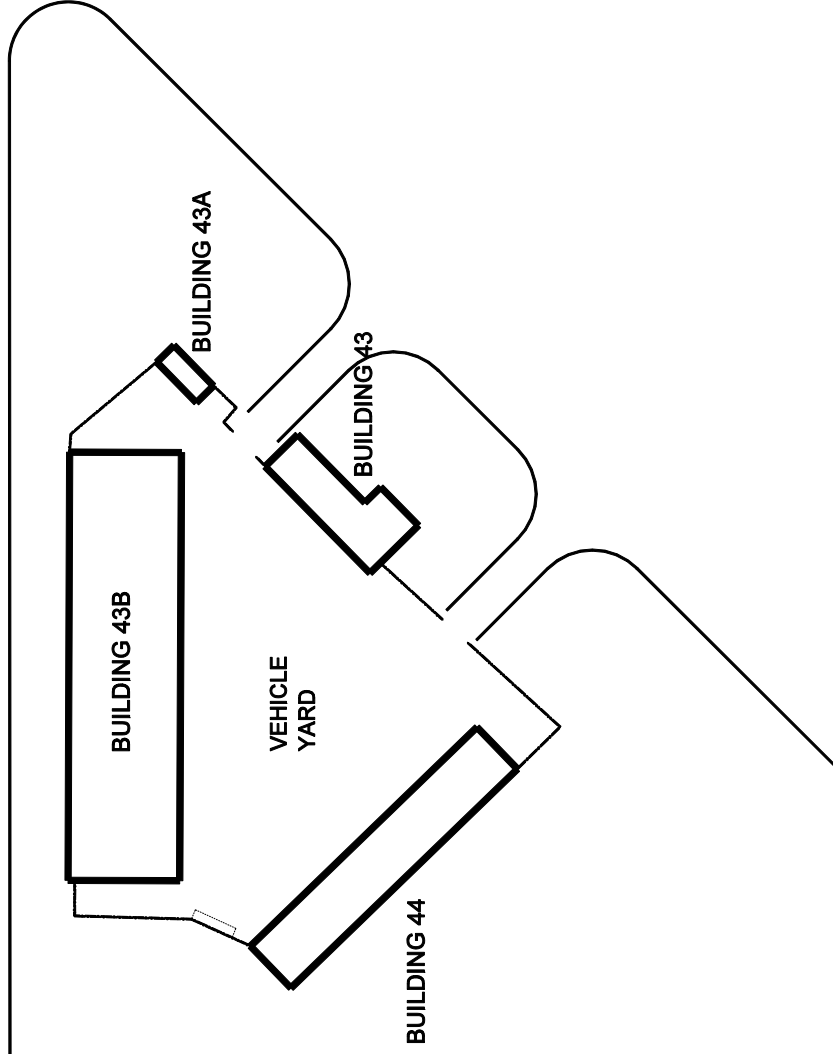


BUILDING 43 - OFFICE WORKSHOPS PLAN

WORKSHOPS R3
FLOOR PLAN
VEHICLE WORKSHOP & OFFICE
BUILDINGS 43 A+B



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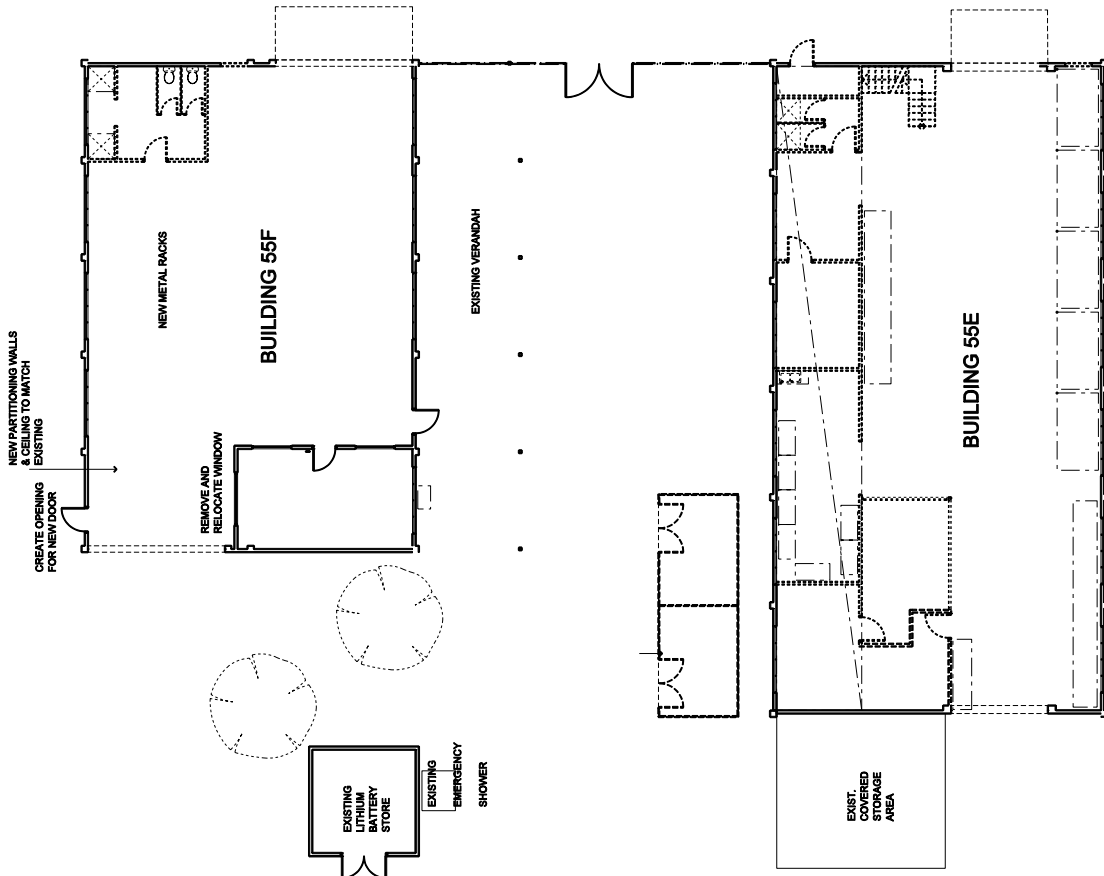
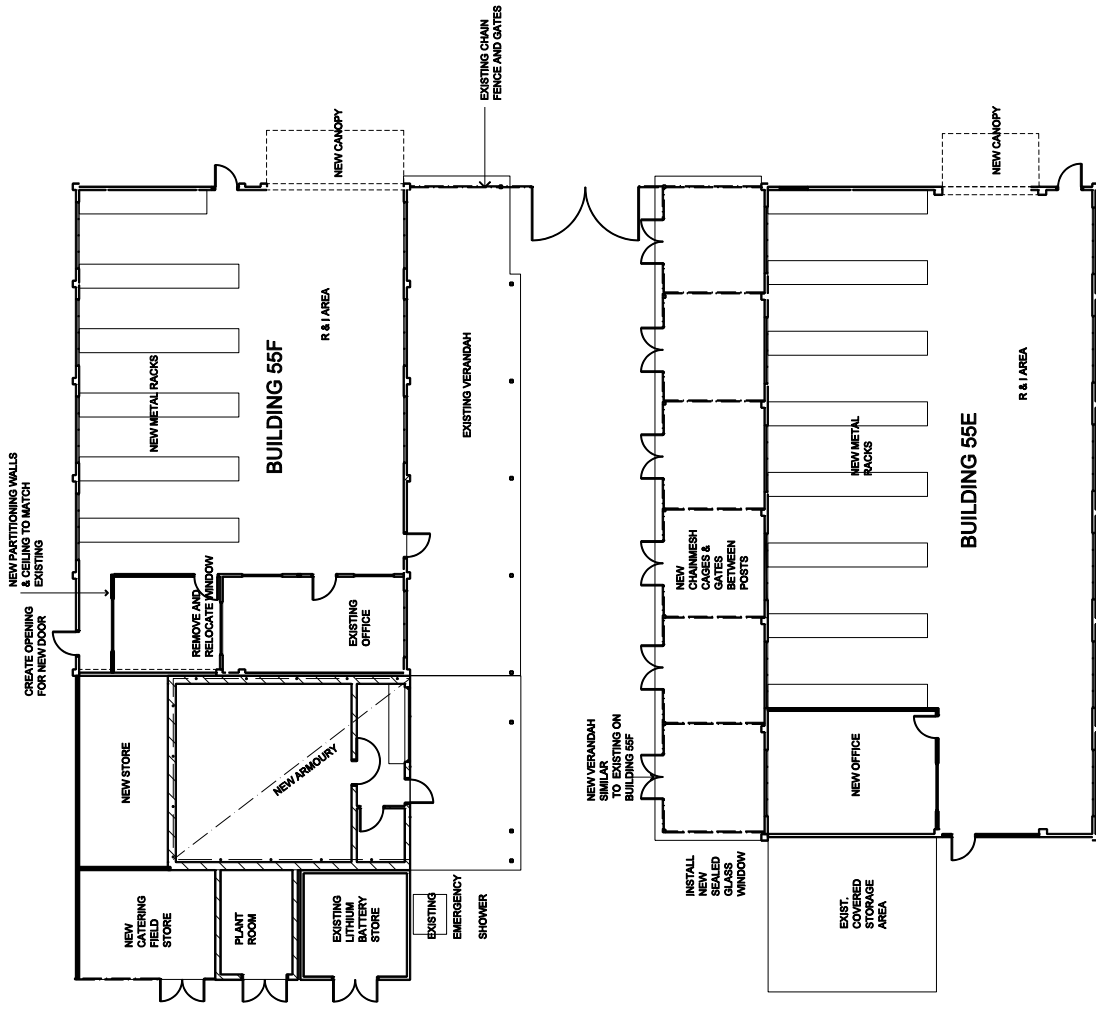


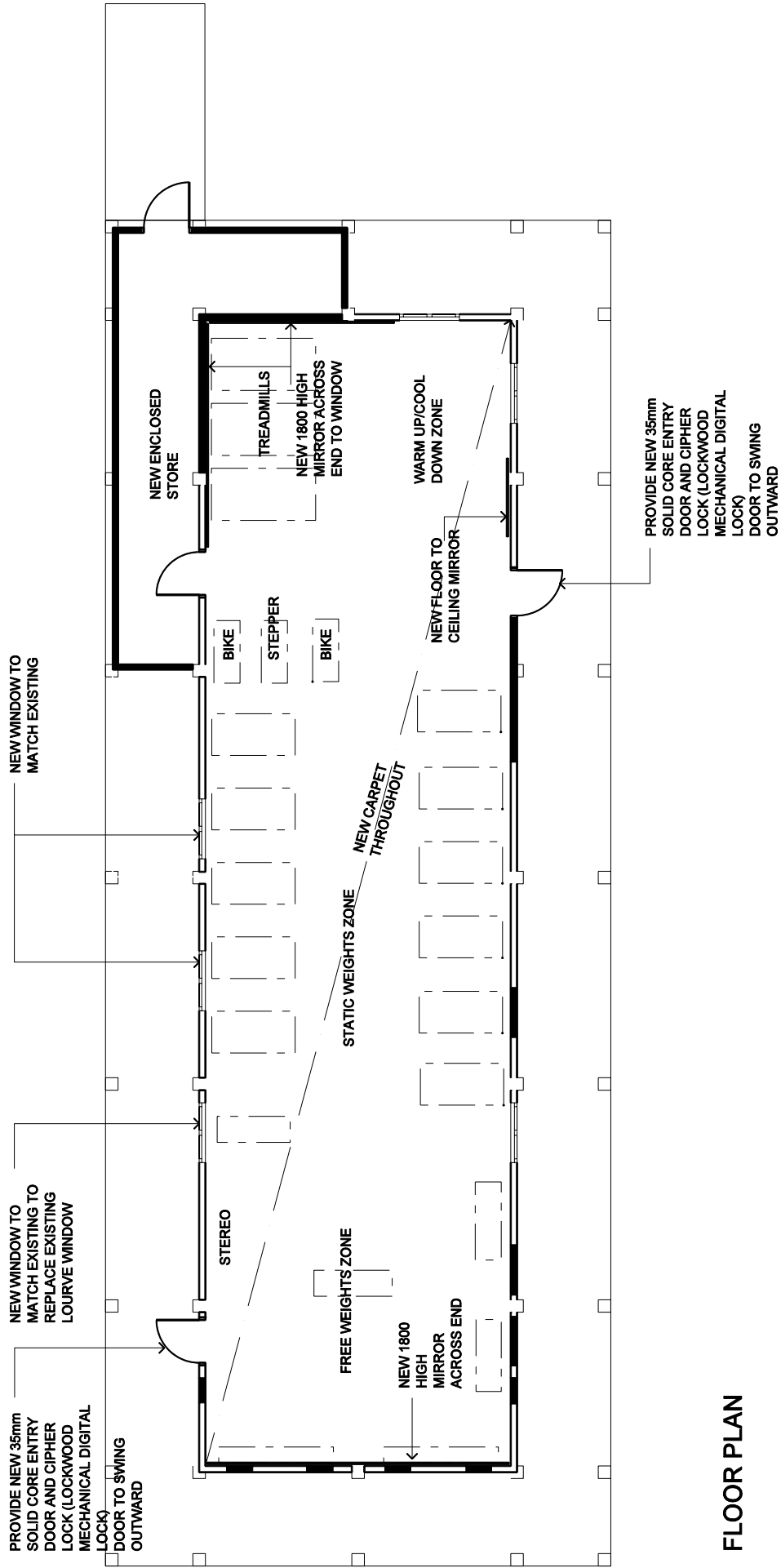
SITE PLAN

WORKSHOPS R4
SITE PLAN
BUILDINGS 43 A+B



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February 2007





FLOOR PLAN

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