



**FACILITIES FOR TROOP LIFT HELICOPTER**

**RAAF BASE TOWNSVILLE, QLD**

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

**DEPARTMENT OF DEFENCE  
CANBERRA, ACT**

May 2006

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**PART A – JUSTIFICATION**

**INTRODUCTION**

**Background**

1. This evidence to the Parliamentary Standing Committee on Public Works presents a proposal for the refurbishment, re-use and construction of facilities for Army's 5th Aviation Regiment (5 Avn Regt) facilities at Royal Australian Air Force (RAAF) Base Townsville, to support the introduction of the Multi-role Helicopter 90 (MRH90). The MRH90 is being acquired under Defence Capability Plan Project Air 9000 (Phase 2). A Location Plan is at Attachment 1, a Base plan at Attachment 2 and a Site Plan at Attachment 3.
2. 5 Avn Regt is located in the south western precinct of RAAF Base Townsville and currently operates three squadrons of helicopters, providing troop lift capabilities in support of Army elements at Lavarack Barracks. One of these squadrons, 171 Aviation Squadron, is to relocate to the Holsworthy Army Base to provide dedicated support for the ADF's Special Forces counter-terrorism capability. This squadron is to be replaced at Townsville by a squadron equipped with the new MRH90, a helicopter which can carry troops, small vehicles or underslung cargo. The MRH90 is fully marinised, and can operate from amphibious ships. Operation of the new aircraft and associated facilities will be in direct support of Defence Capability Output 3.4 – Capability for Army Aviation Operation.
3. RAAF Base Townsville is one of a chain of airfields maintained for the defence and surveillance of the northern areas of Australia and is to remain an operational base under current long term planning.
4. Two key issues which significantly influenced the planning and design of the project were:
  - a. the requirement to maximise the use of the site to allow for future facilities development to support 5 Avn Regt operations; and
  - b. the need for 5 Avn Regt to remain fully operational during construction.

## **OBJECTIVE**

5. The objective of this project is to provide facilities and infrastructure that are critical to initial introduction and continuing operation of the MRH90 in Townsville. The proposed facilities and infrastructure works involve a mixture of new facilities and adaptation and refurbishment of existing facilities.
6. On current planning, the delivery of the MRH90 aircraft to Townsville will be phased over eighteen months from December 2007. Facilities will be provided progressively between July 2007 and February 2008, to meet the Regiment's training, operational and maintenance requirements.
7. This project requires the prior relocation of 171 Aviation Squadron to Holsworthy. Three aircraft from 171 Aviation Squadron are already operating in the Sydney basin. Postings for 171 Aviation Squadron personnel to Holsworthy Army Base are programmed for December 2006, with all aircraft relocating to this location in mid January 2007.

### **Date for Completion**

8. Subject to Parliamentary clearance of this project, construction will commence in late 2006, with completion in early 2008.

## **THE PROPOSAL**

9. This proposal involves:
  - a. constructing a new purpose built building (Training and Mission Planning);
  - b. refurbishing existing buildings (aircraft shelters, repair parts store and workshops);
  - c. extending two buildings (to house repair parts administration, ground support equipment workshop and storage, and Draft Priority 1 equipment storage); and
  - d. constructing carparking and engineering services infrastructure.

### **Location**

10. RAAF Base Townsville is located approximately seven kilometres from Townsville's Central Business District. All elements of the proposal outlined in this evidence are confined to the 5 Avn Regt precinct at RAAF Base Townsville.

### **Benefits of Expected Improvements**

11. The proposal provides facilities to meet the Army's requirement to support the introduction of the MRH90 aircraft.
12. 171 Aviation Squadron will be relocated to the Holsworthy Army Base to continue their airmobile role, with an emphasis on supporting the ADF's counter-terrorism capability. A Squadron 5 Avn Regt will then relocate to Townsville and be equipped with the MRH90. A Squadron 5 Avn Regt currently operate Iroquois helicopters (UH1H) at Oakey Army Base.

### **Cost Estimate**

13. The estimated outturn cost of this project is \$20.0 million excluding GST. The cost estimate includes construction costs with fitout, professional fees, furniture and fittings, information technology and a contingency sum.

### **Operating Costs**

14. There will be a small increase in the net personnel and operating costs at Army's 5 Avn Regt at RAAF Base Townsville. This increase is due to the energy, maintenance and garrison support cost for the new buildings. These increased costs will outweigh the savings expected from the maintenance and energy costs for the existing buildings identified for refurbishment in the project, including the offset savings from facilities at Oakey, which will be vacated.

## **OPTIONS**

15. Refurbishing existing facilities vacated by 171 Aviation Squadron provides a cost effective solution to accommodate A Squadron 5 Avn Regt. This also collocates A Squadron with the remainder of 5 Avn Regt, providing a range of operational benefits.
16. The construction of all new facilities to support the introduction of the MRH90 was considered during planning. By re-allocating facilities vacated by 171 Aviation Squadron and refurbishing these to meet new requirements, constructing some new facilities and some extensions of existing facilities, this proposal offers significantly better value for money for the Commonwealth than new construction. In this proposal, new construction will be limited to providing new purpose built facilities for mission planning and training and extensions to existing facilities for some storage and workshop functions.

## **ECONOMIC, ENVIRONMENTAL, AND SOCIAL IMPACTS**

### **Economic Impacts**

17. This proposal will not produce revenue. Up to eighty personnel are expected to be directly employed on construction activities. The project will also generate some off-site job opportunities from the manufacture and distribution of materials over the anticipated construction period of some 16 months. It is anticipated that local Townsville building contractors and subcontractors would be employed on a large proportion of the construction works.

### **Environmental Impacts**

18. An environmental impact assessment report was prepared for the facilities and operational aspects associated with the MRH90. The Directorate of Environmental Impact Management reviewed the environmental issues outlined in the assessment report and concluded that the proposal is unlikely to have any significant impact on the environment and that the project does not require referral to the Department of the Environment and Heritage under the Environment Protection and Biodiversity Conservation Act 1999.

19. As a contractual obligation, the Head Contractor will be required to develop a Construction Environmental Management Plan with mitigating measures for the proposed works. Based on this plan, a Defence Environmental Clearance Certificate will be submitted for approval before the commencement of construction, in accordance with Defence's Environmental Management Policy. The procedures contained in the Construction Environmental Management Plan will be regularly audited by Defence's Project Manager.

20. The proximity of the site to the Town Common Conservation park requires special attention to stormwater discharge and emissions from operational and maintenance facilities such as the composite workshop. These matters have been taken into account in design development.

21. Defence policy on Environmentally Sustainable Development (ESD) has been implemented in the design of the facilities. Construction materials, finishes and engineering services have been analysed against ESD criteria. As the project includes a combination of new building construction and existing refurbishments, the ESD requirements vary for each element. For the new Army Aviation Training Facility and Mission Planning building, specific performance targets for energy savings, water reduction, waste reduction and construction management have been set, based on Defence's Green Building Requirements

policy and procedures. The design complies with the requirements to achieve 4 Star Green Star rating.

### **Heritage Impacts**

22. There are no heritage listed facilities within the 5 Avn Regt precinct and no heritage impacts have been identified.

### **Social Impacts**

23. This project will have minimal impact on the local community either during or post construction. During the construction phase, there will be employment opportunities available for local tradespeople. There would be little noticeable difference in day-to-day activities at 5 Avn Regt facilities at RAAF Base Townsville. The impact of the new MRH90 flying in the area will be similar to the existing Black Hawk helicopters.

## **LONGER TERM PLANNING**

24. Consideration of the likely siting of future development in the 5 Avn Regt precinct has been taken into account in the planning of the elements of this project. Government is currently considering some later phases of Project Air 9000, replacement or refurbishment of Black Hawk and replacement of Sea King helicopters. Depending on options selected by Government, these phases may have future facilities implications for the 5 Avn Regt precinct.

## **CONSULTATION**

25. Discussions have been held, or are planned to be held, with the Federal Member for Herbert, State Member for Townsville, Townsville City Council and local community and environmental groups.



## **PART B – TECHNICAL INFORMATION**

### **Scope of Works**

26. This project proposes the refurbishment of existing facilities and construction of some new facilities, including extensions to existing facilities. A detailed description of the proposal for each component is listed below and described in more detail in the following sections.

- a. Aircraft Shelters – minor modifications.
- b. Technical Support Squadron Workshops – refurbishment and reconfiguration.
- c. Repair Parts Store – minor modifications and extensions for administration functions.
- d. Draft Priority 1 Store – a new extension for Draft Priority 1 storage.
- e. Ground Support Equipment – new extensions to provide a workshop and a storage facility.
- f. Mission Planning Facility / Army Aviation Training Facility – new combined facility.
- g. Carparking and infrastructure – new asphalt carpark and services infrastructure including electrical, water and sewerage reticulation.

### **Aircraft Shelters**

27. The MRH90 will use the existing Black Hawk helicopter shelters currently used by 171 Aviation Squadron. These nine shelters will be reconfigured, to suit a tail first parking position, the configuration of the MRH90 undercarriage and to meet current Defence standards for fire and security systems.

28. The proposed scope of works includes:

- a. increasing the size of the concrete aircraft parking slabs,
- b. repositioning light fittings at the rear of four shelters,
- c. upgrading the existing fire detection system, and
- d. upgrading security system.

29. Sketch plans of the modifications to aircraft shelters are at Attachment 4.

### **Technical Support Squadron Workshops**

30. The Aircraft Repair Troop of the Technical Support Squadron (TSS) currently operates from a workshop, Building 295, immediately adjacent to the hangar used for scheduled maintenance and repair.

31. To address inadequate workshop spaces and additional requirements arising from MRH90, the following scope is proposed to reconfigure the workshop building:

- a. relocate repair parts administration and ground support equipment maintenance to an extension of the repair parts store building;
- b. enclose the current covered area for new plant room space;
- c. construct a larger composites workshop, able to handle rotor blades;
- d. relocate the existing maintenance bay for Black Hawk engines;
- e. establish a new maintenance bay for MRH90 engines; and
- f. establish a larger sheet metal workshop.

32. Sketch plans of the revised configuration is at Attachment 5.

### **Repair Parts Store**

33. The primary functions performed in the Repair Parts Store are:

- a. receipt, storage and cataloguing of new or repaired parts from suppliers;
- b. processing of orders from and despatch of parts to workshops; and
- c. receipt of unserviceable parts and despatch for repair/replacement.

34. The majority of these functions are currently performed in the Repair Parts Store, with administrative functions and ablutions being undertaken in the workshop building some 50 metres away. Parts vary in size and are stored in boxes, on shelving and pallet racking. Large parts are stored in high bay shelving, accessed by forklift. The largest, helicopter blades, are stored in crates on racks external to the building. Small items are held in drawers in numbered aisles.

35. Introducing the MRH90 increases the storage and management of parts requirement to three helicopter types. The number of line items stored is expected to increase from some 11,000 at present, to around 15,000.

36. The proposed scope of work proposed includes:

- a. constructing a new mezzanine floor of some 100m<sup>2</sup> for small parts storage;
- b. reconfiguring shelving;
- c. purchasing a new side loading forklift to suit reconfigured shelving;
- d. upgrading fire services sprinkler to current standards by modifying the existing non-complying fire sprinkler system;
- e. constructing a new building of some 210m<sup>2</sup> to provide administrative areas and amenities; and
- f. improving the existing temperature control system.

37. Sketch plans of the work proposed are at Attachment 6.

### **Draft Priority 1 Storage**

38. Draft Priority 1 (DP1) are kits assigned to each member of the Regiment. They contain equipment required when squadrons or elements of squadrons are away from base on mission, and typically contain a stretcher, backpack, and trunk with helmet, water, tools, spare boots and uniform. They are most commonly stored in metal cages, which hold up to three sets of DP1. These are currently stacked wherever space can be found, in aircraft shelters and other Regimental facilities and significantly impede safe and effective operations in those areas.

39. The requirement is to provide storage space for 150 DP1 sets required by A Squadron 5 Avn Regt, in close proximity to the A Squadron 5 Avn Regt aircraft shelters and flightline.

40. The proposed scope of work includes:

- a. constructing a light weight steel framed, metal clad structure of some 120m<sup>2</sup> as an annex to Building 291, with concrete floor and roller shutter access;
- b. providing fire detection and fire separation from the main building; and
- c. reconfiguring an existing spoon drain.

41. Sketch plans of the proposed work are at Attachment 7.

### **Ground Support Equipment Store**

42. Ground support equipment is used to provide access to the aircraft and to manoeuvre items on and off the aircraft. Currently ground support equipment is stored within the maintenance hangar, aircraft shelters, externally and in other adhoc areas around the facilities. This practice compromises the activities in these areas and items stored externally are subject to increased maintenance costs due to being exposed to the weather. In the case of a cyclone threat, the ground support equipment stored externally must be secured by moving the equipment indoors. The requirement is to provide a central storage space, located in close proximity to the ground support equipment workshop, with easy access to the maintenance hangar.

43. The scope of work proposed involves constructing a light weight steel framed, metal clad carport-like structure of 750m<sup>2</sup>, as an annex to Helicopter Shelter Building 273. The structure will have open mesh walls and sliding gates. Emergency egress from Building 273 will be maintained.

44. Sketch plans of the proposed work are at Attachment 4.

### **Combined Mission Planning and Army Aviation Training Facility**

45. Mission planning for the MRH90 has a stronger emphasis on the use of electronic data than paper based systems in use for existing helicopters. The planning function itself, and the transmission of planning outputs to the aircraft, involves the transfer of stored electronic data, requiring facilities which accommodate the use of electronic mapping and planning tools. Introduction of the MRH90 dictates the provision of new facilities that meet this revised way of planning operations.

46. For cost efficiency and to optimise opportunities to share facilities required for mission planning and training functions, one facility is proposed to accommodate both functions. The scope of work proposed for the mission planning function in the combined building is:

- a. two 20 person planning and briefing rooms;
- b. a 130 person briefing room, which will be provided as a theatrette jointly used with the Training Facility;
- c. a map storage and viewing room;
- d. a dedicated communications room.

47. The mission planning functions are proposed on the ground floor of the combined building, with provision for possible future expansion. Sketch plans of the proposed facility are at Attachment 8.

### **Army Aviation Training Facility**

48. Introduction of a single squadron of MRH90 necessitates the provision of training facilities for aircrew and ground crew at Townsville where the aircraft will be based. These facilities will be required during the MRH90 introduction into service period and there will be a continuing demand for the facilities for sustainment training. Courses conducted will vary in length from a few days to four months.

49. The proposed training facility includes:

- a. a two storey structure with access from the south for the training function, (and via a covered walkway from the squadron headquarters for Mission Planning personnel);
- b. nine training rooms, each fitted with stations for computer based training;
- c. two syndicate rooms one for six and one for ten personnel;
- d. a 130 person theatrette which will be shared with the mission planning function;
- e. nine instructor's offices and an open plan instructors' area; and

f. an entry and administration area, store rooms and amenities.

50. Sketch plans of each level of the proposed facility are at Attachments 8 & 9.

### **Carparking and Services Infrastructure**

51. There is currently a deficiency in the number of carparks available in the 5 Avn Regt precinct. Parking for smaller cars, 20 motor cycles, and a covered park for 12 bicycles will be included to meet ESD obligations. In accordance with safe base principles, the carpark will be at least 50m from military facilities and will be outside the 5 Avn Regt security fence.

52. New and upgraded engineering services are required to support the reconfigured and new facilities proposed in this project. A substation and reticulation upgrade is proposed to meet the increased electrical requirements. Additional water supply, drainage and sewerage works are also proposed for connection to new facilities.

53. The proposed scope of work includes:

- a. construction of a new 207 space carpark, vehicle access road and pedestrian access path to 5 Avn Regt facilities;
- b. provision of low level carpark lighting, landscaping, drainage and environmental measures;
- c. a substation upgrade; and
- d. enhanced site infrastructure for electrical, water and sewerage reticulation.

54. Sketch plans of the proposed carpark and associated services are at Attachment 10.

### **Site Planning, Selection and Description**

55. All the proposed works are within the 5 Avn Regt precinct at RAAF Base Townsville. This property is Commonwealth owned and Defence controlled. This project does not require the acquisition of additional land. The boundaries of the site are fixed by a major public road immediately to the south, by the Town Common Conservation Park to the west, by the cross runway, the Town Common and airfield operational facilities to the north, and by approach and clearance limits imposed by the main runway to the east. These constraints have required careful planning to maximise the efficient use of land in the precinct.

### **Zoning and Approvals**

56. All the facilities proposed in this evidence are, or will be constructed, within the boundaries of RAAF Base Townsville, which is designated “Defence Special Purposes”. No civilian authority design or construction approvals are required, although works will comply with the relevant Standards and Regulations.

## **Codes and Standards**

57. Where appropriate, the design and construction of the proposed works and services will conform to the relevant sections of the following:

- a. Building Code of Australia,
- b. Australian Standards and Codes,
- c. Commonwealth and State legislation,
- d. Defence Manual of Fire Protection Engineering,
- e. Defence Facilities Communications Cabling Standard, and
- f. Defence security publications.

58. A qualified and practising certifier will be required to certify that the design and the finished construction of the proposed facility meets the requirements of the Building Code of Australia, relevant Codes and Standards, the Defence Manual of Fire Protection Engineering, and any additional State, Local Government and Defence requirements.

59. The successful tenderer will be required to produce a Quality Plan. This plan will clearly show how building codes, Australian Standards, and any additional Defence requirements in relation to security, fire protection, and fire safety will be met and how the required standards will be maintained.

## **Provision for Disabled**

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

## **Occupational Health and Safety**

61. The proposed facilities will comply with the requirements of the Occupational Health and Safety (CE) Act 1991, the Department of Defence Occupational Health and Safety Manual and relevant Queensland Government Occupational Health and Safety legislation, and operate in accordance with an approved Occupational Health and Safety Plan.

62. All construction sites will be appropriately secured to prevent public access during the construction period. No special or unusual public safety risks have been identified.

## **Energy Conservation Measures**

63. The Commonwealth Government is committed to ESD 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 efficiency targets established by the Government as part of its commitment to improve ESD. This project addresses this policy by adopting cost effective ESD as a key objective in the design, development, and delivery of new and refurbished facilities.

64. Preliminary design development for this project has included an analysis of energy consumption that could be anticipated from the implementation of the proposal. The energy efficiency of new buildings will be audited within twelve months of occupancy.

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

- a. using insulation and weatherproofing seals;
- b. using energy efficient lighting and lighting control systems;
- c. using energy efficient plant and equipment;
- d. providing the capability to control energy use by zones within the facility;
- e. specification of waterless urinals and AAA water efficient fixtures; and
- f. using Building Management Systems, as part of an area-wide energy management strategy.

### **Planning and Design**

66. The designs for the new and refurbished facilities will provide a safe, efficient and pleasant workplace. The designs offer good economy in relation to floor area, construction techniques, buildability and finishes, while achieving the necessary functional requirements, work flow patterns and work environment required to fulfil the function of the space.

67. During the preliminary design stage, the project design team has considered 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.

68. In selection of services and associated equipment, both the capital cost and operational and maintenance costs have been considered.

69. 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.

70. This project will:

- a. maximise the use of existing infrastructure to minimise capital facilities costs;

- b. adopt conventional construction techniques and materials, commonly used by the construction industry in regional Australia, with due regard given to climatic conditions; and
- c. utilise readily available and durable materials that combine long life with minimum maintenance and are sympathetic with the existing buildings, landscaping and precinct.

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

### **Structural Design**

72. The proposed new single storey facilities will generally be steel portal frame structures built on ground concrete floor slabs, clad external walls, and a metal roof appropriate to the environment. The two storey building will be a reinforced concrete structure with load bearing external block walls up to the 1<sup>st</sup> floor and metal clad steel framed 1<sup>st</sup> floor and roof structures. The structural design will provide control of cracking of concrete and incorporate structural tolerances for long term settlement. Internal walls will generally be non-load bearing frames lined with plasterboard to provide for maximum flexibility in future floor layout. The structure will be cyclone resistant, having been designed in accordance with Australian Standards.

### **Materials and Finishes**

73. Materials and finishes will be selected from those readily available locally for their functionality, durability, and low maintenance and for their ecologically sustainable design properties.

### **Mechanical Services**

74. New and refurbished facilities, with the exception of stores and most workshops, will generally be air-conditioned and 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. 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 where practicable. Mechanical plant will have a level of spare capacity to ensure future flexibility.

### **Hydraulic Services**

75. New facilities will be connected to the existing water and sewage infrastructure within RAAF Base Townsville.

### **Electrical Services**

76. A substation upgrade is proposed to provide the required additional electrical capacity within the 5 Avn Regt precinct.

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

### **Fire Protection**

78. The design of the fire protection systems will comply with the Defence Manual of Fire Protection Engineering.

### **Security**

79. In accordance with Government initiatives to improve physical security arrangements in Government departments, advice from designated security authorities has been incorporated into the design solutions for the proposed facilities. The security threat assessment will be reviewed during the detailed design phase and the facilities will be secured as appropriate to the functional use. The highest security classification for the facilities addressed in this proposal is expected to be 'Secret'. Security protection will be provided in accordance with the Defence Security Manual.

### **Civil Works**

80. The proposed sites for new or extended facilities do not present any particular civil engineering problems, but each will be the subject of further survey and geotechnical investigation during the detailed design phase. Stormwater management will be incorporated into the existing system.

### **Landscaping**

81. This proposal will not cause any substantial change in the essential character of existing facilities. Landscaping works would be directed towards the restoration of areas disturbed during construction and general improvement of the built environment. Precautions will be

taken to avoid compromising existing environmental sensitivities by adopting landscaping practices in keeping with local environmental conditions.

### **Project Delivery System**

82. A traditional Head Contract delivery system is proposed for this project. The Head Contractor form of delivery is particularly well-suited to projects where the scope is well-defined and can be constructed unhindered by operational constraints.

83. A Project Manager has been appointed to represent Defence and to act as Contract Administrator for the project.

### **Associated Drawings**

84. Attachments 1-3 provide locality and site plans. Attachments 4-10 provide preliminary concepts for the major elements of the proposal outlined in this evidence.

## **ATTACHMENTS**

1. Base Location Plan
2. RAAF Base Townsville
3. Site Plan
4. Aircraft Shelters – Preliminary Proposal
5. Technical Support Squadron Workshops – Preliminary Proposal
6. Repair Parts Store – Preliminary Proposal
7. Draft Priority 1 Store – Preliminary Proposal
8. Mission Planning / Training Facility (Ground Floor) – Preliminary Proposal
9. Mission Planning / Training Facility (First Floor) – Preliminary Proposal
10. Carpaking & Infrastructure – Preliminary Proposal

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