



**Australian Government**

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**Department of Defence**

# **DELAMERE AIR WEAPONS RANGE REDEVELOPMENT**

**Delamere Air Weapons Range, Northern Territory**

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

Canberra, Australian Capital Territory

August 2015

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# **Delamere Air Weapons Range Redevelopment**

## **Identification of the Need**

1. Delamere Air Weapons Range is the primary Air Weapons Range for the Royal Australian Air Force (RAAF). In 2012 the Training Area Capability Board for the Delamere Air Weapons Range considered the Design for Training of the Range and concluded that there were deficiencies in the current Range and identified that significant redevelopment was required to support future use by the Australian Defence Force (ADF). The Design for Training was used as a basis to develop the infrastructure, facilities and sustainability requirements to support this future Range use.
2. Following the Training Area Capability Board, the Chief of the Air Force (CAF) also confirmed that there is likely to be increased exercise activity and requirements from Australia's coalition partners for increased exercise access and operational fidelity.
3. The capability of the Delamere Air Weapons Range to support Air Force capability will be further enhanced with the installation of the Mobile Threat Training Emitter System (MTTES) enabling capability that is to be procured as part of the EA-18G Growler Airborne Electronic Attack Capability Project. A separate facilities project to support the introduction and operation of the EA-18G Growler Airborne Electronic Attack Capability, inclusive of the facilities required to support MTTES enabling capability, has been approved by Government. Subject to Parliamentary approval of this separate project, it is proposed that the facilities required to support the MTTES enabling capability at Delamere will be delivered under the proposed Delamere Air Weapons Range Redevelopment Project.
4. The training opportunities and facilities offered by a combination of the surface and air spaces of Navy's Northern Australia Exercise Area, the land training areas of Bradshaw, Yampi Sound and Mount Bunday and the RAAF Bases at Tindal, Curtin and Darwin, and the Darwin Air Weapons Range, are a significant

part of the capability of the ADF training asset. The combined capability presented by Delamere Air Weapons Range and the assets mentioned are considered unique in the world.<sup>1</sup>

## **Background**

5. The Delamere Air Weapons Range is located in the Northern Territory, approximately 140km south-south-west of RAAF Base Tindal, near Katherine and 450km south from Darwin. The Delamere Air Weapons Range first came into service in 1988.
6. The Delamere Air Weapons Range is 2112 km<sup>2</sup> in area and is divided into a Defence Practice Area (DPA), gazetted by the Minister for Defence in September 2014, and a small parcel of land currently used for lower-impact activities. The boundary of the DPA is shown in Attachment 1.
7. Delamere Air Weapons Range is the RAAF's primary Training Area for air-to-surface weapon deliveries. Representative targets at Delamere Air Weapons Range include an airfield complex, urban environment, and fuel storage complex. The Range also includes a high explosive (HE) impact area, practice bombing impact zone, practice rocketry impact zone and air-to-surface gunnery lanes.
8. The Delamere Air Weapons Range is permanently manned and has the capability to score air-to-ground bombing. The Range also has the ability to support airdrop, unmanned aerial vehicles (UAV), airborne sniper and limited base protection training.
9. The Range is currently used by ADF units and other visiting foreign forces for air weapons training, special operations training and ground defence exercises.
10. Three major deficiencies have been identified with the current range as follows:

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<sup>1</sup> Executive Summary, Delamere Air Weapons Range Facility Training Area Capability Board Report, 04 June 2012.

- a. The siting of the current range facilities are centrally located within the current Weapons Danger Areas (WDA), laser safety traces, and ammunition safety templates. The siting of such range facilities currently limits range operations;
- b. The range boundary is inadequately secured, with regular range boundary violations evident, and fence destruction or removal commonplace, as the existing boundary fencing and signage is inadequate; and
- c. The existing range facilities, including roads, services and pavements, are degraded and have failed to keep pace with an increased operational use / tempo.

### **Supporting RAAF Operations at Delamere Air Weapons Range**

- 11. In order to meet the future operational needs of the Range the following requirements were identified in the Training Area Capability Board:
  - a. relocate range operations and accommodation facilities to a perimeter location in order to maximise the availability of the Defence Practice Area (DPA) for targeting and weapons training;
  - b. re-establish infrastructure (roads, airfields) and services (water, power, waste) to support increased range usage;
  - c. increase the Range capability to conduct live (High Explosive) training; and
  - d. improve safety and range security through stronger boundary delineation and access control.
- 12. The decision by the Growler Project to base the MTTES enabling capability at Delamere Air Weapons Range further expands the operational uses of the Range. Development and delivery of these two projects are being planned concurrently to ensure that the costs associated with a remote project are minimised, and that infrastructure requirements are mutually supportive.

13. In August 2015, the Government approved the Project, inclusive of funding.

### **Description of Proposal**

14. The Project proposes to provide fit for purpose facilities and range infrastructure that are capable of supporting current and future range operational requirements. As part of the redevelopment, the Project also proposes to conduct demolitions, extensive civil works, essential service works and landscaping.
15. The proposed Delamere Air Weapons Range facilities and infrastructure are widely dispersed around the Range and includes both new construction and refurbishment of existing infrastructure.
16. The proposal involves nine elements of work with a number of sub-elements:
- a. Range Control Accommodation:
    - i. central kitchen, dining and gym facilities;
    - ii. permanent living accommodation;
    - iii. visitor living accommodation; and
    - iv. recreation rooms.
  - b. Range Operations Centre:
    - i. working accommodation and briefing facilities;
    - ii. covered visitor car parking;
    - iii. explosive ordnance storage facilities;
    - iv. a helipad; and
    - v. fencing and access control for the compound.
  - c. Maintenance Areas and Workshops:
    - i. maintenance building;



- ii. refuelling point; and
  - iii. vehicle wash bay and loading ramp.
- d. Site Wide Infrastructure:
  - i. site works; and
  - ii. engineering infrastructure works.
- e. Alternative High Explosive (HE) Impact Area.
- f. Road Network.
- g. Boundary Fencing.
- h. Airfield Remediation.
- i. Demolition and Remediation.

## **Project Location**

- 17. Delamere Air Weapons Range is located approximately 140km south south-west of Katherine, and 450km south of Darwin, in the Northern Territory. A Range Locality Plan showing the location of Delamere Air Weapons Range is at Attachment 1.
- 18. A Site Plan showing the location of the project elements is at Attachment 2. Plans of the proposed facilities and infrastructure are shown at Attachments 3 to 13.
- 19. The proposed redevelopment will not increase the Range population.

## **Options Considered to Fulfil the Identified Need**

- 20. To meet the identified need, Defence has considered a number of options including the adaptive reuse of existing facilities and / or the construction of new facilities.

21. The adaptive reuse and / or relocation of existing facilities was considered, but the options did not meet the need as:
  - a. the existing facilities are within the proposed range safety templates;
  - b. the existing facilities no longer meet the functional needs of the Range,
  - c. the existing facilities do not meet current building standards; and
  - d. much of the material comprising the existing facilities has deteriorated and would no longer be suitable for reuse.
22. The preferred option is to construct new range operations facilities in the vicinity of the existing range entry and to relocate all supporting capabilities and infrastructure accordingly. An alternative High Explosive Impact Area will be established and essential road and airfield remediation will be conducted. The existing Defence Practice Area boundary fence will be repaired and new sections of fence constructed to provide a continuous boundary to the Defence Practice Area. This program of works will resolve the existing deficiencies by:
  - a. removing essential facilities from within current range safety templates and allowing the maximum expansion of future target areas;
  - b. ensuring the integrity of the range boundary to support safety and security of range operations; and
  - c. improving range infrastructure and operations facilities to enable effective and efficient operation.

## **Environment and Heritage Assessment**

### **Overview of Assessment Process**

23. Consistent with established Defence policies, Defence engaged a specialist environmental consultant to prepare an Environmental Report of the proposed works. The purpose of the Environmental Report is to assist Defence in determining whether a more substantive environmental impact assessment is

required under the *Environment Protection and Biodiversity Conservation Act 1999 (Cth)* or whether the project can proceed via Defence's internal process of environmental clearance certificates subject to specified controls or mitigation measures being employed.

24. The draft Environmental Report was completed in March 2015. The key focus areas of the report were ecology, indigenous heritage assessment, contamination, fauna and flora management and air and water quality. The draft Environmental Report identified that there was some risk to the project relating to ecology, contamination, and indigenous heritage. These risks are discussed in more detail below.
25. The remaining environmental and heritage risks identified in the draft Environmental Report were defined as minor and will be effectively managed through the existing Defence Regional Environmental Management System, preparation of a comprehensive Construction Environmental Management Plan, and application of the Environmental Compliance Certificate process.
26. Based on the outcomes of the draft Environmental Report, it is not anticipated that a referral will be required under the *Environmental Protection and Biodiversity Conservation Act 1999 (Cth)*.

## **Ecology**

27. The draft Environmental Report identified that there are a number of vulnerable flora species that can potentially occur at Delamere Air Weapons Range. Previous surveys in 2000 and 2008 did not locate any threatened flora species, though several species were recorded within 10km of the Range. The ecological assessment of the proposed impact sites conducted as part of the draft Environmental Report did not record any threatened flora species or habitat.
28. A diverse array of fauna, consistent with the region and habitat availability, has been recorded at Delamere Air Weapons Range. This includes a number of nationally significant fauna. The site assessment conducted most recently identified two threatened species of fauna at Delamere Air Weapons Range:

- a. Gouldian Finch (*Erythrura gouldiae*); and
  - b. Crested Shrike-tit (*Falcunculus frontatus whitei*).
29. The draft Environmental Report did not record any threatened fauna species within the Delamere Air Weapons Range Redevelopment Project's proposed sites.
30. Ongoing mitigation measures to reduce any risk of damage to the ecology will include:
- a. strict adherence to Defence's existing Weed Management Control Program to prevent the spread of weeds through mishandling of removed vegetation;
  - b. the natural dispersal of local fauna and provision of a suitably qualified 'wildlife spotter' during any land clearing activities;
  - c. the washing of construction vehicles, plant and equipment during construction to minimise the spread of weeds; and
  - d. the implementation of anti-bird nesting measures during construction.

## **Contamination**

31. A contamination review was undertaken as part of the Environmental Reporting process. The results of the contamination review have informed the contamination remediation allowance within the overall scope of works. The Project team has assessed the relative risks in relation to the Project and made practical and cost effective recommendations for mitigating the risks and meeting all legislative and policy requirements.
32. As a result of previous range activities and air accidents, there are a number of known contaminated sites that will not be affected by the proposed Project works. The Project has allowed for the remediation of some hydrocarbon contamination during the removal of the existing underground storage tanks at the current Range Control location, as well as asbestos contamination within the existing buildings. Other ongoing mitigation measures will include:

- a. a testing regime for contaminated soil during excavation activities; and
- b. the completion of a required soil contamination assessments and, if required, the removal and treatment of contaminated soil.

### **Indigenous and Non Indigenous Heritage**

- 33. Delamere Air Weapons Range contains a number of culturally sensitive sites of significance to the Wardaman People, the Traditional Owners of the area. The Delamere Air Weapons Range Standing Orders address the requirements for use and management of these identified areas and sites, to ensure protection of their heritage and cultural values.
- 34. The use of Delamere Air Weapons Range is also subject to an Indigenous Land Use Agreement. Local Traditional Owner's have been engaged through the Aboriginal Areas Protection Authority and Northern Land Council to provide clearance to the sites for proposed works.
- 35. Field survey activities have identified that the preferred site for the Range Control complex is in an area with low density artefact scatter that will require management during construction. No works are currently planned in areas of known significance and this was confirmed by the provision of Authority Certificates through the Aboriginal Areas Protection Authority on 23 July 15.
- 36. In accordance with the Indigenous Land Use Agreement, Defence will seek a capability statement from the Wardaman People identifying their skills and experience that may be relevant to any contracting opportunities associated with these works. Defence will subsequently ensure that the Wardaman People are made aware of any relevant contracting opportunities, and that tenders consider the employment of Aboriginal people that may have skills appropriate to the works.
- 37. Prior to the establishment of the Delamere Air Weapons Range the site was used for pastoral purposes associated with the Delamere and Willeroo Stations.

During the development of the Environmental Report no other non-indigenous land uses were identified.

## **Key Legislation**

38. The following key legislation is relevant to this project:

- a. *Environmental Protection and Biodiversity Conservation Act 1999 (Cth);*
- b. *Building and Construction Industry Improvement Amendment (Transition to Fair Work) Act 2012 (Cth);*
- c. *Work Health and Safety Act 2011 (Cth);*
- d. *Disability Discrimination Act 1992 (Cth);*
- e. *Fair Work Act 2009 (Cth); and*
- f. *Fair Work (Building Industry) Act 2012 (Cth).*

39. The design of all proposed Project facilities complies with all relevant Australian Standards, Codes and Guidelines including National Construction Code, 2015 (inclusive of the Building Code of Australia).

## **Consultation with Key Stakeholders**

40. Defence recognises the importance of providing local residents, statutory authorities and other interested stakeholders an opportunity to provide input into, or raise concerns relating to major projects such as the Delamere Air Weapons Range Redevelopment Project.

41. Defence has engaged with a variety of internal and external stakeholders during project development, and further consultation will be conducted following the referral of this project to the Parliamentary Standing Committee on Public Works. Stakeholders to be consulted include:

- a. The Hon Warren Snowdon MP, Federal Member for Lingiari;
- b. The Hon Willem Westra van Holthe, State Member for Katherine;

- c. The Hon Bess Nungarrayi, State Member for Stuart;
  - d. Local Traditional Owners;
  - e. Katherine Town Council;
  - f. Victoria Daly Regional Council;
  - g. Katherine Chamber of Commerce; and
  - h. Local Property Owners/Managers, Dilinya Land Trust.
42. Defence has developed a community consultation plan and communication strategy to provide local residents, statutory authorities and other interested stakeholders an opportunity to provide input into, or raise concerns relating to the proposed Project.

## **Purpose of the Works**

### **Project Objectives**

43. The Project proposes to provide fit for purpose facilities and range infrastructure that is capable of supporting current and future Range operations requirements. As part of the Redevelopment, the Project will also conduct demolitions, extensive civil works, essential service works and landscaping.

### **Details and Reasons for Site Selection**

44. A Range Siting Board for Delamere Air Weapons Range was held on 16-18 February 2015 to assess a number of locations for the Range Control Complex and other sites at Delamere Air Weapons Range. The preferred sites as recommended by the Board were subsequently endorsed by Air Force on 19 May 2015.
45. The Range Siting Board considered two sites for the new Range Control Complex and two sites for the alternative High Explosive Impact Area. Key users and operators of the Range, as well as Defence Support Group personnel attended the Board. Advice was provided to the Board from subject matter

experts from throughout Defence in accordance with the formal Defence site selection process.

46. The Site Selection Board was subsequently approved by Director of Training Area Regulation and Policy on 15 July 2015.
47. The proposed sites are all open forest or grassland that has not previously been used for construction, but are optimally located when all considerations have been applied.

### **Detailed Description of the Proposed Scope of Works**

48. This project proposes nine scope elements. Details of each scope element are as described below.

#### **Project Element 1: Range Control Accommodation**

49. This element is part of the new Range Control Complex (Attachment 3) and includes the construction of new, purpose built living facilities for both permanent staff and visiting personnel.
50. This scope element consists of five sub elements to achieve the working requirements of Delamere Air Weapons Range. The following facilities are proposed:
  - a. Central Kitchen, Dining and Gym facility:
    - i. A single storey building with a large external covered area for alternative dining or overflow. The floor plan is illustrated in Attachment 4.
    - ii. The building will be located to the south of the new Range Operations Centre, and central to the permanent and visitor living accommodation.



- iii. The building is to include a kitchen, including cold storage, dining room, gym, ancillary storage areas, ablutions and communications rooms.
- iv. Disabled facilities and access will be provided.
- b. Recreation rooms for permanent and visiting personnel:
  - i. Single storey buildings, one for the permanent staff and a separate area for visiting personnel, adjacent to the central facilities will be provided as recreation rooms. The floor plans are illustrated in Attachment 5.
  - ii. The buildings will provide recreation spaces for permanent and visiting personnel and will include kitchenette and refrigeration, TV and lounges, as well as other space for unit-supplied equipment. The visitor recreation facility will include the ablution facilities for the visitor accommodation.
- c. Permanent staff accommodation:
  - i. Single storey cellular buildings containing individual occupancy units with ensuites will be provided. The floor plan is illustrated in Attachment 6.
  - ii. The buildings will be located to the east of the central facilities.
  - iii. The buildings will provide living accommodation for Delamere Air Weapons Range personnel and will include bed, desk, and storage as well as a small personal ensuite.
- d. Visitor accommodation:
  - i. Single storey cellular buildings containing dual occupancy units will be provided. The floor plan is illustrated in Attachment 7.
  - ii. The buildings will be located to the west of the central facilities.

- iii. The buildings will provide living accommodation for visiting personnel and will include bed and storage area. Communal showers and ablutions are provided as part of the visitor recreation facility.
- e. Covered Walkways:
  - i. Covered walkways are provided between the buildings in order to facilitate personnel movement during extreme weather conditions.

## **Project Element 2: Range Operations Centre**

- 51. This element includes the construction of a new, purpose built facility for the use of both permanent staff and visiting personnel. The facility will enable the effective control and management of all range activities from a central location.
- 52. This element consists of four sub elements to achieve the working requirements of the Range Operations staff. The following facilities are proposed:
  - a. Range Operations Centre:
    - i. A single storey building with operations, administration and medical facilities to support current range operations. The building also includes an Operations area for the MTTES enabling capability.
    - ii. A number of covered car parking spaces are provided for vehicles permanently based at the Range. The floor plan is illustrated at Attachment 8.
  - b. Explosive Ordnance Store:
    - i. An explosive ordnance storage facility is provided to store the very limited quantity of explosives necessary for disposal of unexploded ordnance.

- c. Helipad:
  - i. A helipad is provided to facilitate medical evacuation, search and rescue operations and troop movements in support of Range operations. Its size will support the range of contracted and military rotary-wing aircraft that may provide these functions. The site plan showing the location of the helipad is at Attachment 9.
- d. Compound Fencing, Access Point and External Structures:
  - i. The new Range Control Complex will be located close to the Buntine Highway. In order to protect the public and to enable security of the facilities the compound will be fenced and access control provided.
  - ii. Sundry external structures such as a flagpole, storage for waste bins, signage and railings are also included in this element.

### **Project Element 3: Maintenance Areas and Workshops**

- 53. This scope element includes the construction of new, purpose built facilities for the significant numbers of vehicles are either permanently stationed or temporarily stored at the Range to support maintenance of the Range and personnel movement.
- 54. This element consists of three sub elements to achieve the maintenance requirements of the Range. The following facilities are proposed:
  - a. Maintenance Building:
    - i. A maintenance building will be constructed that is capable of storing the regular Range complement of vehicles, machinery and equipment.
    - ii. The building includes one enclosed bay for storage of specialist explosive ordnance disposal equipment. The floor plan is illustrated at Attachment 10.

- b. Refuel Point:
  - i. The Project will construct a facility for the provision of diesel fuel to Defence vehicles.
- c. Wash Bay and Ramp:
  - i. A new wash bay will be constructed for the removal of dirt, weeds and seeds from Defence or contractor vehicles.
  - ii. A loading ramp for vehicles or equipment that is transported to and from the Range will be provided.

#### **Project Element 4: Site Wide Infrastructure**

55. This scope element includes new infrastructure and modifications / extensions to existing infrastructure to support the new Range Control Complex. This element consists of six sub elements to achieve the support requirements of the Range. A site plan is provided at Attachment 11. The following facilities are proposed:
- a. Site Works (Civil and Landscaping):
    - i. The main road entry will be re-paved and new pavements will be provided for vehicle circulation around the compound. Architectural design has minimised the pavement requirement through compact building spacing and by mapping movement routes within the compound.
    - ii. The Project will undertake limited landscaping to provide a practical aesthetic to the complex. This will take into account the specific environmental conditions at Delamere Air Weapons Range.
  - b. Electrical Supply and Distribution:
    - i. A new Central Power Station will be provided as well as a site Main Switchboard and distribution network.

- ii. The new Central Power Station will be a hybrid solar/diesel system. This system has been assessed as the most cost effective whole of life solution for Range power requirements. During the normal course of daylight operations the solar system will provide Range power. This will be supplemented by diesel generators as required.
- c. Communications and Security:
  - i. The Range includes several complimentary communications systems that will have to be relocated or re-established at the new Range Control Complex.
  - ii. The Range Safety Network will be replaced. The project will replace the current UHF system with a VHF system that is used more broadly across other Defence ranges.
  - iii. The Air-Ground-Air radios will be relocated to the new Range Control Complex.
  - iv. The current target scoring system uses a microwave communications system that will be relocated to the new Range Control Complex.
  - v. All communications systems will require new masts and antennas with sufficient separation to avoid communications interference. The project has allowed for construction of new masts to support all of these requirements.
- d. Water Supply and Distribution:
  - i. Water for the Range is supplied from bores. Hydrological surveys are currently underway to determine sound locations for new bores to supply the Range need. Bore capacity and above ground storage will be provided to ensure some reserve capacity in the event of an interruption in supply.

- ii. The water distribution system will provide water for domestic and emergency (fire) use around the new facilities.
- e. Gas, Mechanical and Fire Services:
  - i. Gas will be supplied and distributed from a central main gas storage tank.
  - ii. A new Building Management System and metering will be installed in accordance with the Defence Energy Management Strategy. This will allow better monitoring and more efficient use of site power and water, reducing the environmental impact of the facility.
  - iii. External fire services will support the reticulation of water for fire-specific purposes (such as a stand pipe for the loading of water tankers).
- f. Sewer and Stormwater:
  - i. A new sewer system will be established capable of supporting the full accommodation complement of the Range, with some flexibility to account for increased visitor numbers or periods of low activity.
  - ii. The on-site wastewater management system will comprise septic tanks, a large absorption bed and associated infrastructure.

#### **Project Element 5: Alternative High Explosive Impact Area**

- 56. This element requires new facilities for range practices and additional infrastructure and equipment to support target scoring. A site plan is provided at Attachment 12.
- 57. This element consists of two sub elements to achieve Range requirements for an alternative impact area:

a. Impact Area:

- i. The impact area comprises a central, circular, cleared zone with a radius of 600m. This is surrounded by a larger, shaped area where all trees are felled, and a fire break. The larger shaped area is a safety measure to ensure that the target area is able to be easily distinguished from other natural or man-made features on the ground. In this case a triangle or A-frame shape has been specified, in contrast to the existing, square, target area.

b. Target Scoring System:

- i. A new target scoring system, comprising two towers with fixed cameras and power supply will be provided. A microwave communications system will be provided to transmit the target imagery and results to the Range Operations Centre.

**Project Element 6: Road Network**

58. This element comprises repairs to the existing road network and a new road to the Alternative High Explosive Impact Area.

59. The completion of this element will provide enhanced access to all ranges at Delamere Air Weapons Range, increasing the safety of range staff and improving the drainage and all-weather characteristics of existing routes. Attachment 2 illustrates the location of the individual roads within the network.

60. This element consists of the upgrade of six essential roads on the Range :

a. Main access roads (1, 2A, 2B):

- i. These sealed roads will have minor re-surfacing and re-marking, including repairs to existing culverts.

b. Target Access Roads (12, 13, 14):

- i. Road 12 will be enhanced from the current 4WD track to a proper range access road.
- ii. Roads 13 and 14, accessing the ‘TacTown’ and ‘India 4’ targets respectively, will be repaired and re-shaped improve safety and trafficability.

### **Project Element 7: Boundary Fence**

- 61. This element provides a continuous boundary for the Defence Practice Area. The construction of new fencing and adjustment to existing fencing will improve range safety and security.
- 62. This element consists of approximately 200km of new fencing or significant adjustment to fencing and associated firebreaks.

### **Project Element 8: Airfield**

- 63. This element repairs the existing facilities at the Range airfield. These repairs will enable ongoing RAAF use of the airfield for air movement in support of regular Range operations and to support flight training activities. Attachment 13 illustrates the location of works at the airfield.
- 64. This element consists of seven minor sub elements grouped as follows:
  - a. Repair Turning Node:
    - i. The turning nodes will be re-graded and compacted to support tight-radius aircraft turning.
    - ii. The runway surface will be regraded and repaired; and
    - iii. A stockpile of material for future runway repair will be established.
  - b. Replace Airfield Markers:
    - i. The existing markers have been damaged or moved and will be repaired or replaced.



- c. Repair existing apron:
  - i. The existing aircraft parking apron is unable to be used due to water damage and poor surface conditions. It will be modified to improve drainage and repaired to allow future aircraft parking.
- d. Repair shoulders and surrounds:
  - i. The shoulders and surrounds of the airfield have been damaged by surface water flows. Drainage will be improved through repairs and re-shaping to reduce the potential for further degradation and as a basis for reduced future maintenance.

### **Project Element 9: Demolition and Remediation**

- 65. This element comprises the demolition of the existing Range Control Complex and surrounding facilities.
- 66. The demolition of the old facilities will be conducted following the relocation to the new Range Control Complex. These facilities do include buildings with asbestos content and underground fuel storage tanks. The Project will remediate areas affected by that contamination in accordance with Defence policy and legislative requirements.

### **Public Transport, Local Road and Traffic Concerns**

- 67. As range usage is likely to increase following the redevelopment a new slip lane will be constructed on the Buntine Highway at the main entry to decrease the interference with through traffic and increase the safety of Range personnel.
- 68. During the construction phase of the project there will be an increase to the number of large vehicles that use the Buntine Highway to deliver material to site. Construction management controls and contractual arrangements will mitigate the effects of this on local road users by coordinating the delivery schedule with local road users.

## **Zoning and Local Approvals**

69. The sites approved for all project scope elements are all located within a Training Support Zone as defined within the RAAF Tindal and Delamere Air Weapons Range Zone and Precinct Plan (2007). The intended function and use of all project elements are consistent with this zoning.

## **Childcare Provisions**

70. All staff at Delamere Air Weapons Range are housed in Tindal or Katherine and travel to site weekly. There are no childcare facilities at the Range.

## **Impact on Local Community**

71. As part of this project, new on-base accommodation will be provided at the Range. Personnel will continue to travel weekly from Tindal by either road or chartered aircraft. This activity will not change as a result of the redevelopment, so should not present an appreciable change to the local community.
72. The construction of the Project will provide opportunities for local enterprises, including indigenous corporations, to provide services as sub contractors, providing this is in line with Commonwealth Procurement Rules and any relevant contractual obligations.

## **Planning and Design Concepts**

73. 17 Squadron from RAAF Base Tindal operates the Range Control and maintains the Range for all users. The functional needs of RAAF and 17 Squadron extensively dictate the planning and design criteria. These criteria and objectives, formulated as part of the design process, include the following:
- a. the layout of the operations, maintenance and living accommodation should reflect improved functional efficiency;
  - b. the alternative HE Impact Area should be centrally located within the DPA to make the most use of the available range space and environmental control measures already in place;

- c. the capability and capacity of transport and services infrastructure should improve; and
  - d. the security and safety of the Range is to improve.
74. Based on these planning objectives, the following design principles were adopted:
- a. all buildings floor areas and work spaces were designed to meet functional requirements and work flow patterns;
  - b. site space allows for flexibility, further expansion, and buffer zones to reduce noise interference;
  - c. location of all facilities must maximise potential range use;
  - d. civil design has taken into account the principles of remote area engineering; and
  - e. local advice has been applied in selecting fencing methods and access controls.
75. Access and facilities for the disabled will be provided in accordance with the Building Code of Australia, Australian Standard AS1428 and the Defence policy 'Disabled Access and Other Facilities for Disabled Persons'. The facilities will be fully compliant with legislation and will include accessible kitchens, toilets and shower facilities with disabled access to facilities considered in the development phase.

## **Structural Design**

76. The structural design of the proposed hardstands, roads, airfield, and the building structures has taken into account local geotechnical conditions and are in accordance with all relevant Australian Standards and Codes. Appropriately qualified and experienced geotechnical and structural engineers have been engaged in the design of the proposed facility.

77. Wherever possible, prefabricated structures have been incorporated in an effort to minimise on-site work. Structural steelwork has typically been adopted, except where building usage dictates otherwise.

## **Hydraulic Services**

78. Water will be supplied to the proposed facilities from a bore located on the Range. A final location has yet to be determined, subject to an ongoing hydrological survey. This service will connect to the Range Control Complex via in-associated infrastructure. It will comply with Commonwealth, Territory legislation, the Building Code of Australia, relevant Work Place Health and Safety requirements, AS/NZS 3666 Air Handling and Water Systems series and the AS/NZS Plumbing and Drainage series.

## **Electrical Services**

79. There are no reticulated electrical services to Delamere Air Weapons Range. The electrical supply to the proposed facilities will be from a new Central Power Station to be constructed.
80. A number of options for the Central Power Station were investigated. It has been established that a hybrid solar / diesel generator system provides the most energy efficient and whole-of-life cost effective solution.
81. The electrical design has been undertaken in accordance with all relevant Australian Standards, all applicable Legislation, Regulations, Codes of Practice and Guidance Publications relevant in Northern Territory and stated Defence requirements.

## **Communications**

82. Delamere Air Weapons Range requires a wide range of communications services to operate safely and effectively. In addition to the Defence Restricted and Secret computer networks, a number of other networks are supported. All of these will require relocation or refresh including:
- a. safety radio network;

- b. air-ground-air radio network;
  - c. microwave target scoring network;
  - d. wireless local communications network; and
  - e. Bureau of Meteorology reporting network.
83. Telstra is planning to commence works on a new mobile phone tower adjacent to the Range Control complex as part of Project JP2047 - Defence Terrestrial Communications Network. This is a new capability that will enhance Range support communications.

## **Fire Protection**

84. Due to the distance from full-time RAAF or civilian fire fighting services, a fire response is effectively unavailable. RAAF Base Tindal Fire Services have been consulted in developing infrastructure to support the planned deployment of fire services for particular activities.
85. The fire engineering design has been undertaken in accordance with all relevant Australian Standards, all applicable Legislation, Regulations, Codes of Practice and Guidance Publications relevant in Northern Territory and stated Defence requirements.

## **Acoustics**

86. Within the proposed buildings, acoustic privacy of partitioning is provided in accordance with AS/NZS ISO 717.1 Rating of Sound Insulation. This has been determined based on the function within each of the spaces and the level of privacy required.
87. Limited acoustic isolation from external sources has been incorporated into the working accommodation. Due to the nature of range operations exposure to high noise is very limited. However all accommodation has been designed to meet the required sound levels.

## **Security**

88. The Project will provide a boundary fence to portions of the Range with appropriate signage to support the security of the Range and safety of persons neighbouring the Range.
89. There is no public access to the proposed facilities and entry to the proposed facilities will be through the controlled access points at Range Control. The individual buildings on site been designed for the appropriate security classification as stipulated by Defence requirements.

## **Environmental Sustainability of the Project**

90. The Commonwealth is committed to Environmentally 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 efficiency targets established by the Government as part of its commitment to improve Environmentally Sustainable Development. Defence also implements policies and strategies in energy, water and waste to improve natural resource efficiency and to support its commitment to the reduction of energy consumption, potable water consumption and waste diversion to landfill.
91. This project has addressed Commonwealth policy by adopting cost-effective and Environmentally Sustainable Development practices as a key objective in the design of the new facilities. The remote nature of Delamere Air Weapons Range has provided particular opportunities to apply sustainable and cost effective power supply and waste management practices.
92. The ecologically sustainable measures for the Project are balanced with other requirements for Defence buildings, including security and Work, Health Safety considerations to ensure that Defence's operational capability is not compromised. All buildings are designed and will be constructed, operated and maintained to ensure that they use energy efficiently considering their required use.

93. To achieve this, buildings will comply with:
- a. Section J of Volume One of the Building Code of Australia, National Construction Code 2014;
  - b. Part 3.12 of Volume Two of the Building Code of Australia, National Construction Code 2014;
  - c. The Energy Efficiency in Government Operations Policy; and
  - d. Defence SMART Infrastructure Manual.
94. The proposed facilities will be new construction on undeveloped sites. The sites, in terms of footprint, orientation and aspect, provide an opportunity to implement environmental sustainability in precinct and building design.
95. All energy sources supplying the buildings will be individually metered and linked to a control and monitoring system allowing Defence to better manage and monitor environmental performance. Sub-metering will be provided in accordance with the Defence Energy Management Strategy, and the requirements of the Commonwealth Energy Policy.
96. Other Environmentally Sustainable Development initiatives to be implemented within the scope of the Project include:
- a. connecting into a Building Management System network, which allows for centralised monitoring and control of building systems;
  - b. solar and gas hot water systems will be installed for use throughout the buildings to supply hot water for showers and amenity areas;
  - c. electrical power will be provided by a hybrid solar / diesel Central Power Station;
  - d. building orientation will be designed to maximise solar efficiencies;

- e. all facilities will include energy and water efficient plant and fixtures; and
- f. high-efficiency lighting has been selected for the facilities.

## **Landscaping**

- 97. Landscaping design has been included in all new building elements, where appropriate and functional. Landscaping works will also be completed to restore areas disturbed during construction and provide general improvement to the built environment.
- 98. Landscaping design will focus on a functional, low maintenance and water sensitive approach using plants that are indigenous to the area. A contractual establishment period will be included in the landscaping contract to ensure the landscaping elements are maintained and to ensure effective and efficient propagation.
- 99. Landscaping practices will be adopted to be sympathetic with local environmental conditions, particularly the Wet/Dry climate. Clear contractual constraints will also be placed upon the Contractor to address issues, adopt appropriate practices and to deliver services under the Construction Environmental Management Plan.

## **Energy Targets**

- 100. There are no applicable energy targets for this proposal.

## **Work Health and Safety Measures**

- 101. The proposed facilities to be provided under this project will comply with Department of Defence's WHS Policy, the *Work Health and Safety Act (WHS) 2011 (Cth)*, Work Health and Safety (Commonwealth Employment - National Standards) Regulations and the Defence WHS Manual.
- 102. In accordance with Section 35(4) of the *Building and Construction Industry Improvement Act 2005 (Cth)*, contractors will also be required to hold full work health and safety accreditation from the Office of the Federal Safety



Commissioner under the Australian Government Building and Construction Work Health and Safety Accreditation Scheme.

103. Safety aspects of this proposal have been addressed during the design process and have been documented in a Safety in Design Report completed by the Managing Contractor. No special or unusual public safety risks have been identified in this process. The successful construction contractor will also be required to submit a Safety Plan for the construction phase and prior to the start of any construction activities.

## **Cost Effectiveness and Public Value**

### **Outline of Project Costs**

104. The estimated out-turn cost of the Project is \$74.4 million, excluding Goods and Services Tax. This estimate includes the construction costs including escalation allowances, professional service fees, design, construction and Defence contingencies and information technology equipment.
105. Environmentally Sustainable Development principles have been incorporated into the design of the proposed facilities, resulting in greater efficiencies and reduced costs over the design life.
106. Under this project, the Net Personnel Operating Costs (NPOC) have been estimated for the new and upgraded facilities. NPOC analysis provides an estimate of the mature annual cost of operating facilities. The cost estimate becomes the basis of an ongoing, indexed budget transfer for the operation of the facilities being delivered by the project.

### **Details of Project Delivery System**

107. A Project Manager / Contract Administrator has been appointed by the Commonwealth to manage the project works and associated administration of the contracts during the Planning Phase. Subject to Parliamentary approval, value for money assessments and satisfactory performance of the Project Manager /

Contract Administrator, the Commonwealth may extend the Project Manager / Contract Administrator Contract to service the Delivery Phase of the Project.

108. A Managing Contractor has also been appointed to undertake the design of the facilities, which have been completed to 30%.
109. Subject to Parliamentary approval of the project, Defence intends to engage one Managing Contractor via a single stage approach to market, using the Defence Managing Contractor Contract to construct all proposed scope elements of the Project. The Managing Contractor will deliver the project works in accordance with, but not limited to all current National Construction Code – Building Code of Australia guidelines, Commonwealth Procurement Rules, Australian Standards, Defence Standards, Guidelines, Policy and Procedures and Workplace Health and Safety Legislation.

### **Construction Program**

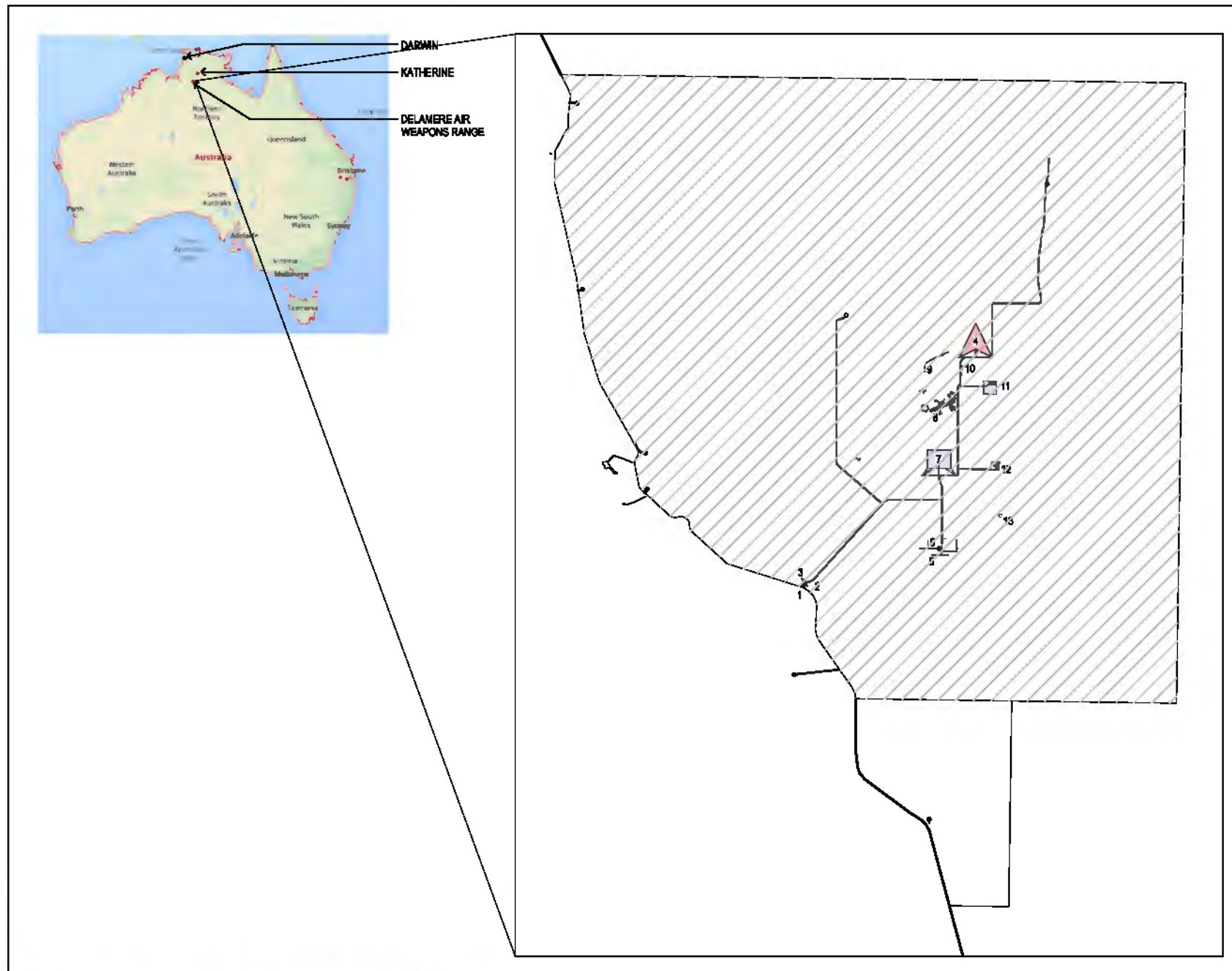
110. Subject to Parliamentary approval of the Project, construction is expected to commence in mid 2016 with construction completed by mid 2018 to allow RAAF use of the Range for key exercises later that year.

### **Public Value**

111. The Project will contribute significantly to a Defence capability need for RAAF, increasing both the capability and capacity of the Range for its design purpose.
112. The Project will also employ a diverse range of skilled consultants, contractors and construction workers that could also include opportunities for up-skilling and job training to improve individual skills and employability on future projects. Opportunities will be made available to the local indigenous population for contracting or individual employment.

### **Revenue**

113. No revenue will be derived from this Project.

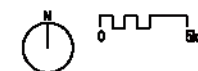


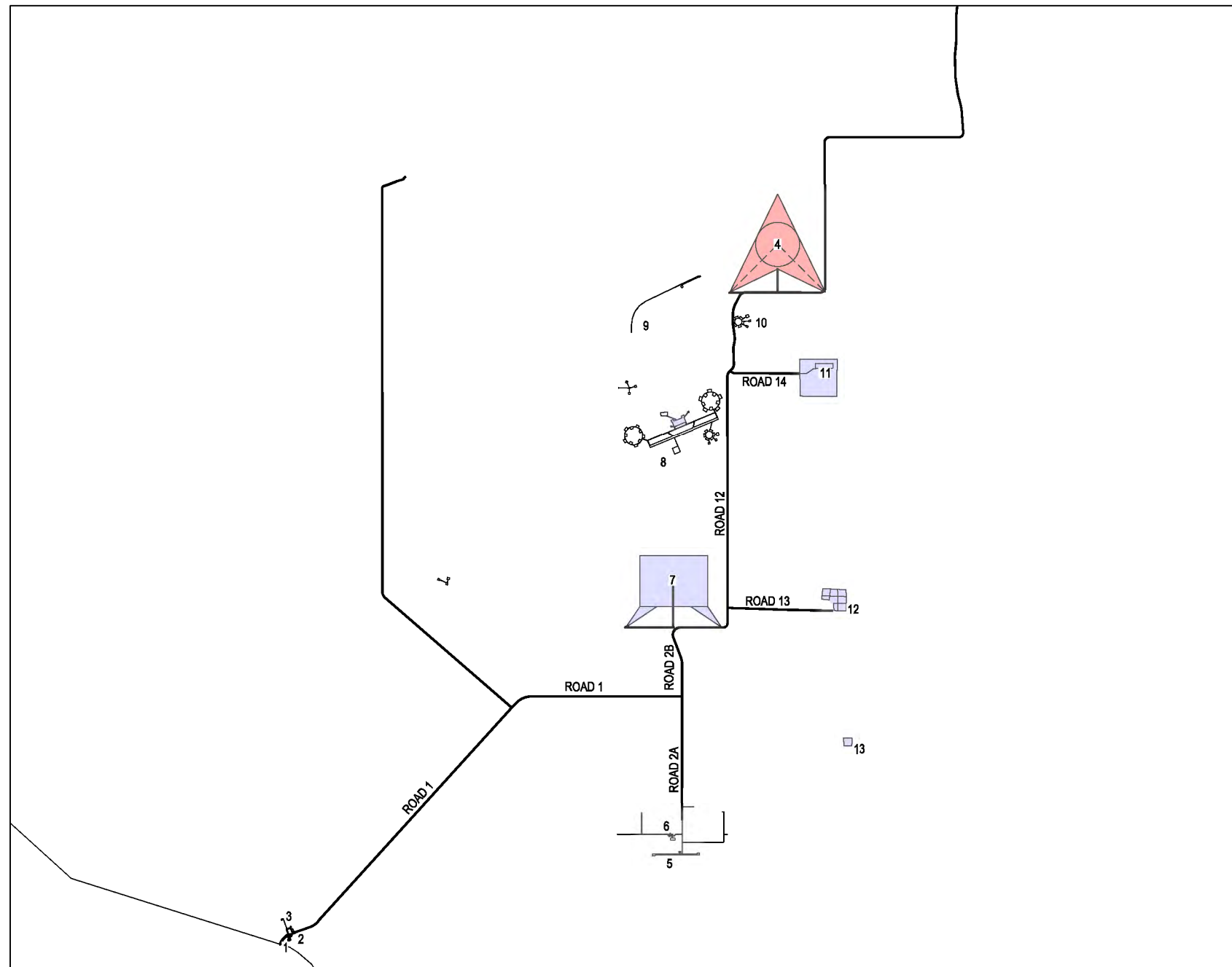
**LEGEND**

EXTENT OF DEFENCE PRACTICE AREA (DPA)

- 1 RANGE OPERATIONS CENTRE
- 2 MAINTENANCE AREAS & WORKSHOPS
- 3 RANGE CONTROL ACCOMMODATION
- 4 ALTERNATIVE HIGH EXPLOSIVE IMPACT AREA
- 5 AIRFIELD
- 6 EXISTING RANGE OPERATIONS CONTROL
- 7 EXISTING HIGH EXPLOSIVE IMPACT AREA
- 8 EXISTING SIMULATED AIRFIELD
- 9 EXISTING SIMULATED RAILWAY
- 10 EXISTING SIMULATED AIR DEFENCE
- 11 EXISTING TARGET INDIA 4
- 12 EXISTING TARGET TACTOWN
- 13 EXISTING SIMULATED FUEL STORAGE

**ATTACHMENT 1 | RANGE LOCALITY PLAN  
DELAMERE AIR WEAPONS RANGE**

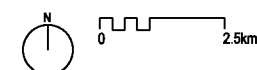


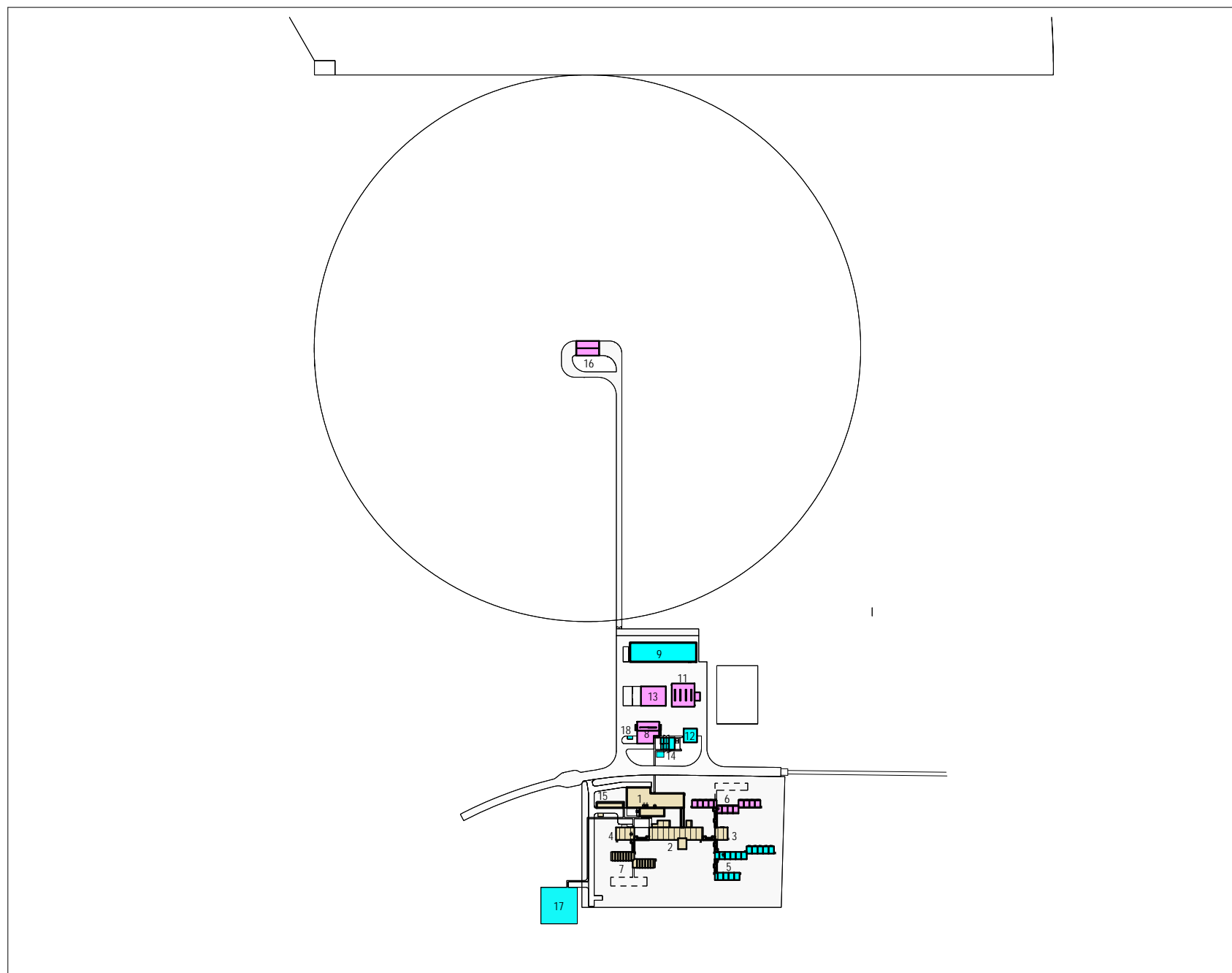


- SITE WORKS LEGEND**
- SERVICES INFRASTRUCTURE
  - SEALED PAVEMENT
  - UNSEALED PAVEMENT
  - CONCRETE PAVEMENT
  - CLEARING
  - EXISTING DELAWR FACILITIES

- 1 RANGE OPERATIONS CENTRE
- 2 MAINTENANCE AREAS & WORKSHOPS
- 3 RANGE CONTROL ACCOMMODATION
- 4 ALTERNATIVE HIGH EXPLOSIVE IMPACT AREA
- 5 AIRFIELD
- 6 EXISTING RANGE OPERATIONS CONTROL
- 7 EXISTING HIGH EXPLOSIVE IMPACT AREA
- 8 EXISTING SIMULATED AIRFIELD
- 9 EXISTING SIMULATED RAILWAY
- 10 EXISTING SIMULATED AIR DEFENCE
- 11 EXISTING TARGET INDIA 4
- 12 EXISTING TARGET TACTOWN
- 13 EXISTING SIMULATED FUEL STORAGE

**ATTACHMENT 2 | SITE PLAN  
DELAMERE AIR WEAPONS RANGE**





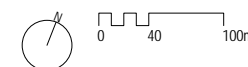
## PROJECT WORKS LEGEND

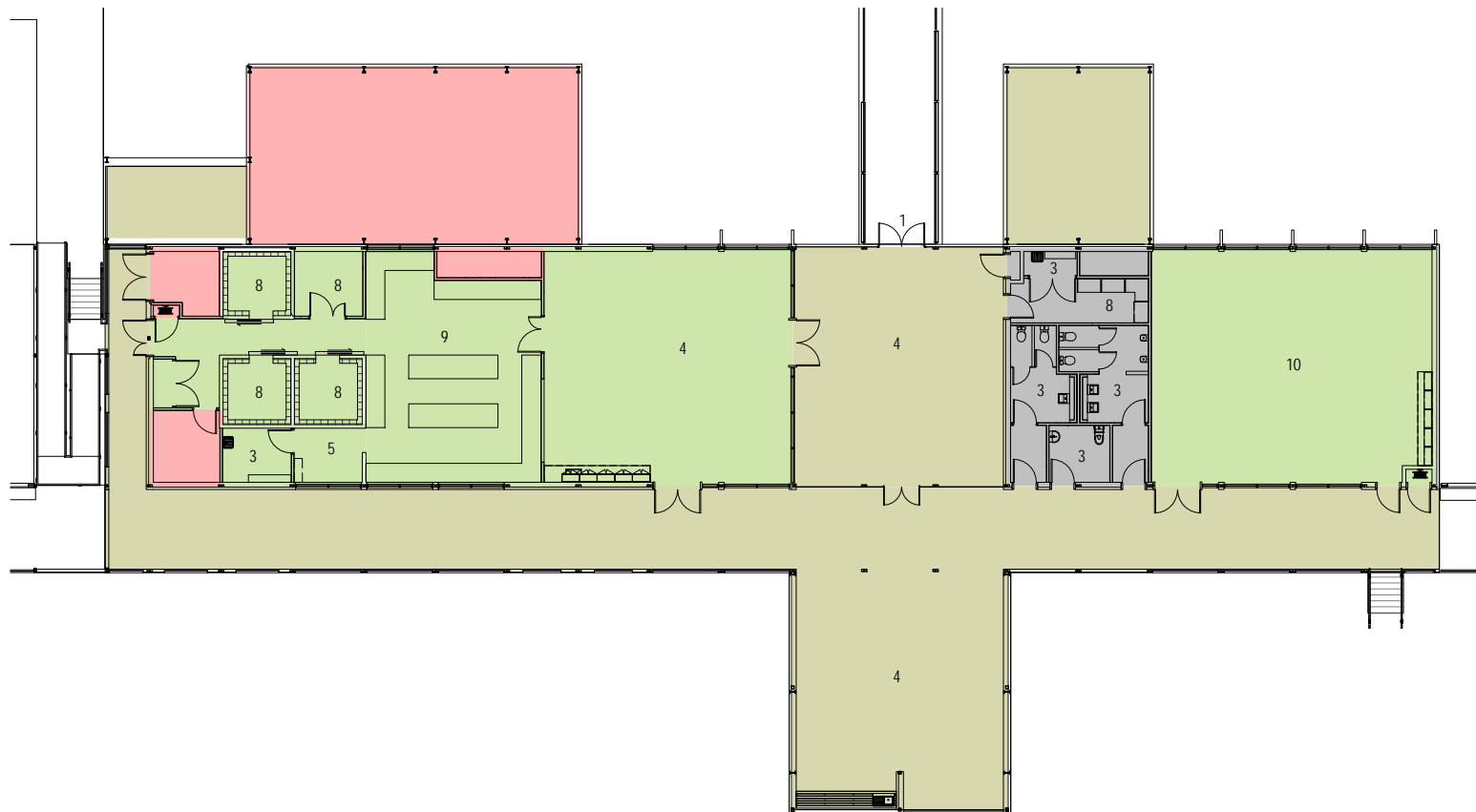
- DELAMERE REDEVELOPMENT
- MTTES DELAMERE
- SHARED

- 1 RANGE OPERATIONS CENTRE
- 2 CENTRAL FACILITIES
- 3 PERMANENT RECREATIONAL FACILITY
- 4 VISITOR RECREATION FACILITY
- 5 DELAWARE PERMANENT ACCOMMODATION
- 6 MTMS PERMANENT ACCOMMODATION
- 7 VISITOR ACCOMMODATION
- 8 MTMS MAINTENANCE BUILDING
- 9 DELAWARE MAINTENANCE BUILDING
- 10 COVERED WALKWAYS
- 11 MTMS VEHICLE SHELTER
- 12 REFUEL POINT
- 13 ADRS STORAGE SHELTER
- 14 SITE MAIN SWITCHBOARD & GENSET
- 15 VISITOR COVERED PARKING
- 16 ADRS EMITTER SHELTER
- 17 HELIPAD
- 18 INDUSTRIAL WASTE COLLECTION POINT

## ATTACHMENT 3

**SITE PLAN**  
**DELAMERE RANGE CONTROL COMPLEX**





BUILDING WORKS LEGEND

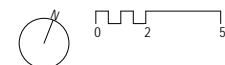
- AMENITIES
- CIRCULATION
- RECREATION / KITCHEN
- UNDER COVERED AREA
- OFFICE
- PLANT
- STORE / WORKSHOP

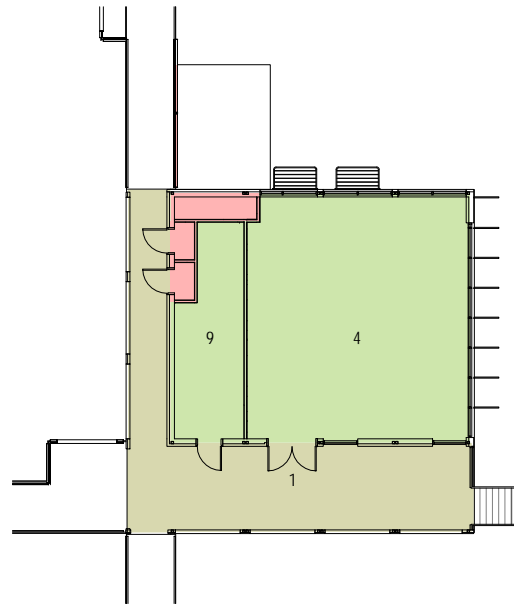
- 1 ENTRY
- 2 RECEPTION / ADMIN
- 3 AMENITIES
- 4 DINING
- 5 OFFICE
- 6 MEETING / AUDITORIUM
- 7 WORKSHOP
- 8 STORE
- 9 KITCHEN
- 10 GYMNASIUM
- 11 ACCOMMODATION

ATTACHMENT 4 | FLOOR PLAN  
| DELAMERE CENTRAL FACILITIES

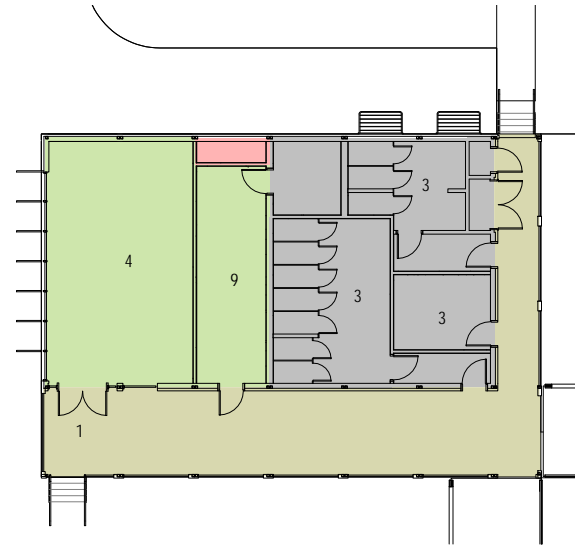
ATTACHMENT 4

FLOOR PLAN  
DELAMERE CENTRAL FACILITIES





PERMANENT RECREATIONAL ROOM



VISITOR RECREATIONAL ROOM

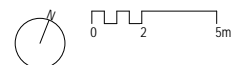
BUILDING WORKS LEGEND

- AMENITIES
- CIRCULATION
- RECREATION / LAUNDRY
- UNDER COVERED AREA
- OFFICE
- PLANT
- STORE / WORKSHOP

- 1 ENTRY
- 2 RECEPTION / ADMIN
- 3 AMENITIES
- 4 RECREATION
- 5 OFFICE
- 6 MEETING / AUDITORIUM
- 7 WORKSHOP
- 8 STORE
- 9 LAUNDRY
- 10 GYMNASIUM
- 11 ACCOMMODATION

ATTACHMENT 5

FLOOR PLAN  
DELAMERE PERMANENT AND VISITOR  
RECREATIONAL ROOMS





BUILDING WORKS LEGEND

- AMENITIES
- CIRCULATION
- RECREATION
- ACCOMMODATION UNIT
- OFFICE
- PLANT
- STORE / WORKSHOP

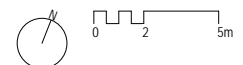
- 1 ENTRY
- 2 RECEPTION / ADMIN
- 3 AMENITIES
- 4 RECREATION
- 5 OFFICE
- 6 MEETING / AUDITORIUM
- 7 WORKSHOP
- 8 STORE
- 9 KITCHEN
- 10 GYMNASIUM
- 11 ACCOMMODATION

ATTACHMENT 6

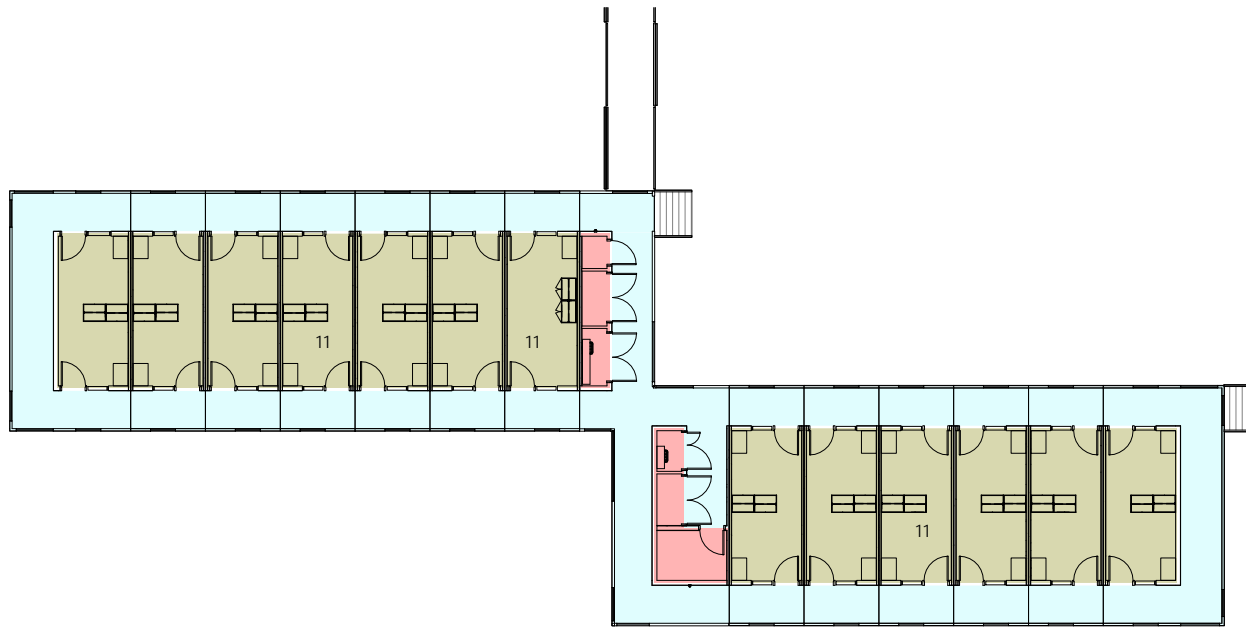
FLOOR PLAN  
DELAMERE PERMANENT ACCOMMODATION

ATTACHMENT 6

FLOOR PLAN  
DELAMERE PERMANENT ACCOMMODATION







BUILDING WORKS LEGEND

- AMENITIES
- CIRCULATION
- RECREATION
- ACCOMMODATION UNIT
- OFFICE
- PLANT
- STORE / WORKSHOP

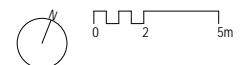
- 1 ENTRY
- 2 RECEPTION / ADMIN
- 3 AMENITIES
- 4 RECREATION
- 5 OFFICE
- 6 MEETING / AUDITORIUM
- 7 WORKSHOP
- 8 STORE
- 9 KITCHEN
- 10 GYMNASIUM
- 11 ACCOMMODATION

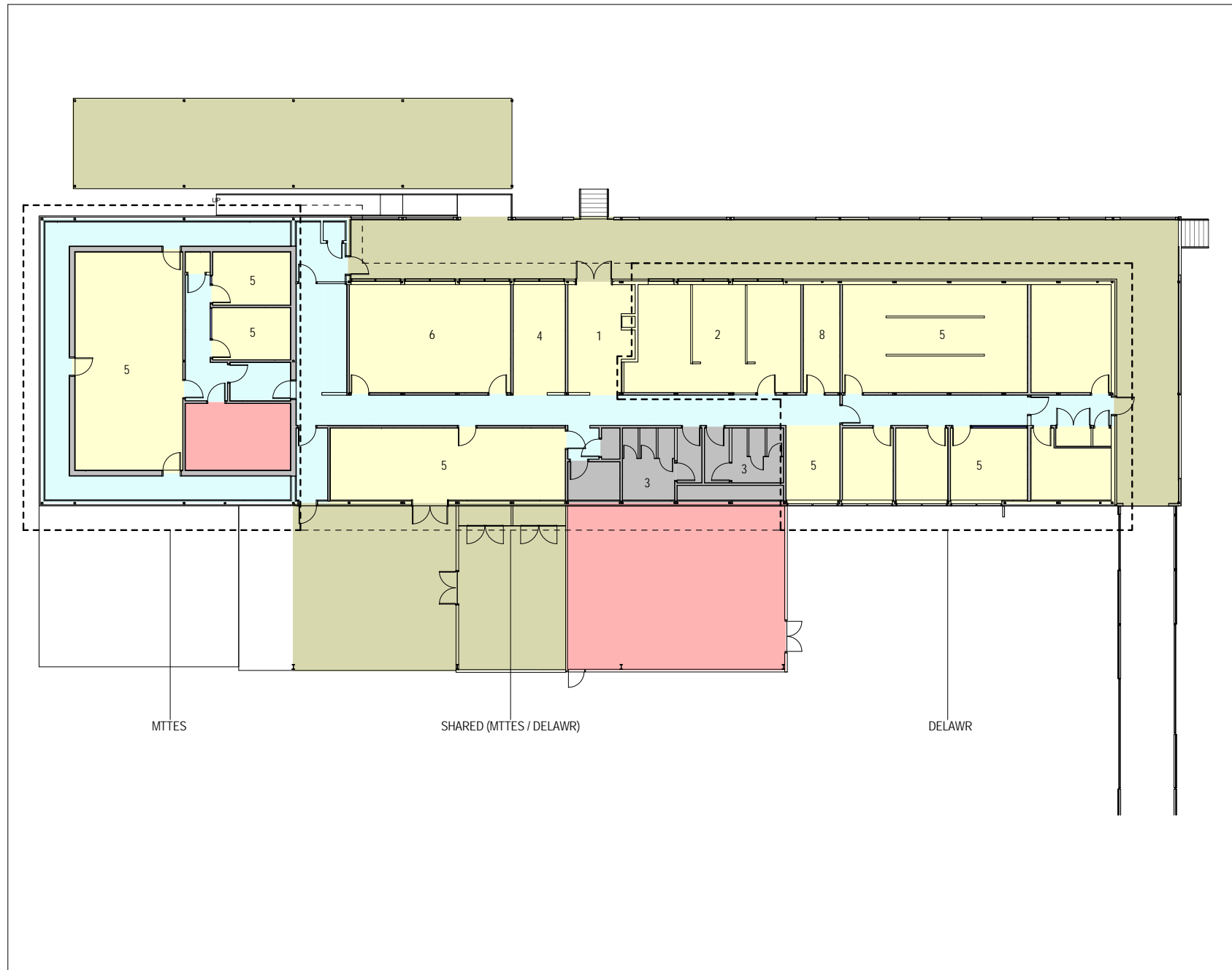
ATTACHMENT 7

FLOOR PLAN  
DELAMERE VISITOR ACCOMMODATION

ATTACHMENT 7

FLOOR PLAN  
DELAMERE VISITOR ACCOMMODATION





BUILDING WORKS LEGEND

- AMENITIES
- CIRCULATION
- RECREATION
- UNDER COVERED AREA
- OFFICE
- PLANT
- STORE / WORKSHOP

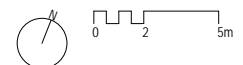
- 1 ENTRY
- 2 RECEPTION / ADMIN
- 3 AMENITIES
- 4 BREW
- 5 OFFICE
- 6 MEETING / AUDITORIUM
- 7 WORKSHOP
- 8 STORE
- 9 KITCHEN
- 10 GYMNASIUM
- 11 ACCOMMODATION

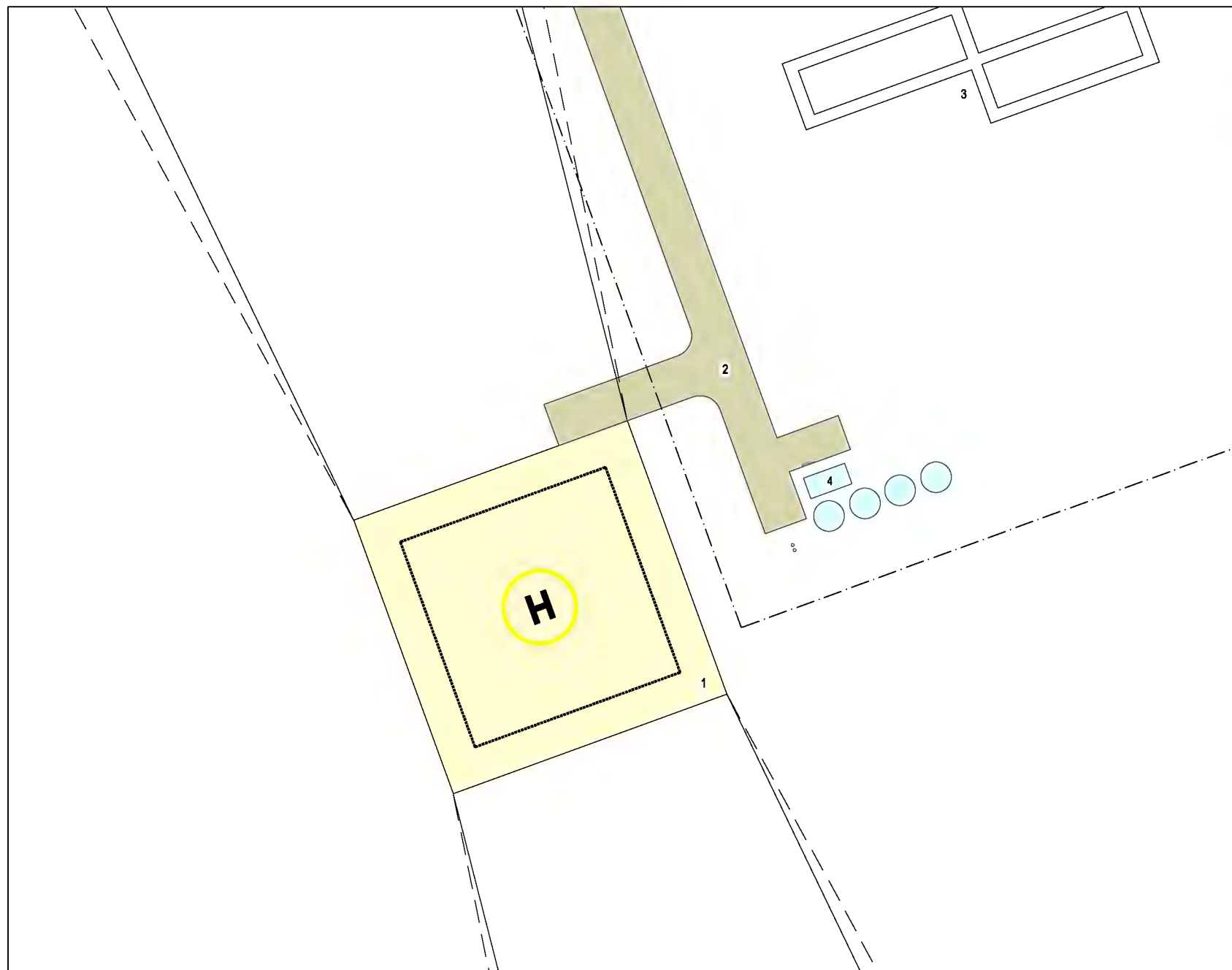
ATTACHMENT 8

FLOOR PLAN  
DELAMERE RANGE OPERATIONS CENTRE

ATTACHMENT 8

FLOOR PLAN  
DELAMERE RANGE OPERATIONS CENTRE





- SITE WORKS LEGEND**
- SERVICES INFRASTRUCTURE
  - SEALED PAVEMENT
  - UNSEALED PAVEMENT
  - CONCRETE PAVEMENT
  - CLEARING
  - EXISTING DELAWR FACILITIES

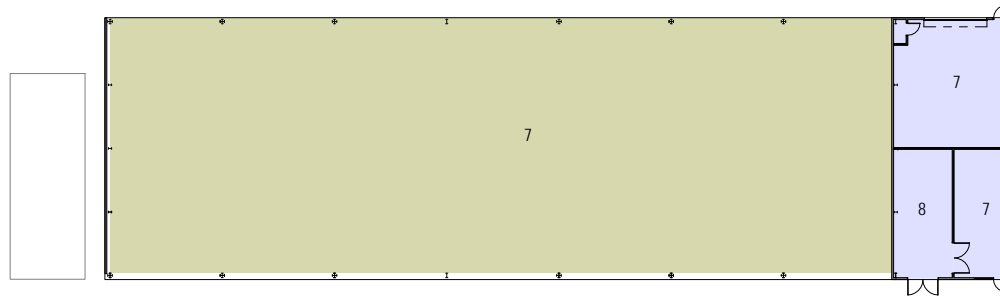
- 1 HELIPAD
- 2 UNSEALED ROAD
- 3 VISITOR ACCOMMODATION
- 4 WATER SUPPLY, STORAGE & TREATMENT

BUILDING WORKS LEGEND

- AMENITIES
- CIRCULATION
- RECREATION
- UNDER COVERED AREA
- OFFICE
- PLANT
- STORE / WORKSHOP

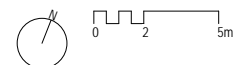
- 1 ENTRY
- 2 RECEPTION / ADMIN
- 3 AMENITIES
- 4 BREW
- 5 OFFICE
- 6 MEETING / AUDITORIUM
- 7 WORKSHOP
- 8 STORE
- 9 KITCHEN
- 10 GYMNASIUM
- 11 ACCOMMODATION

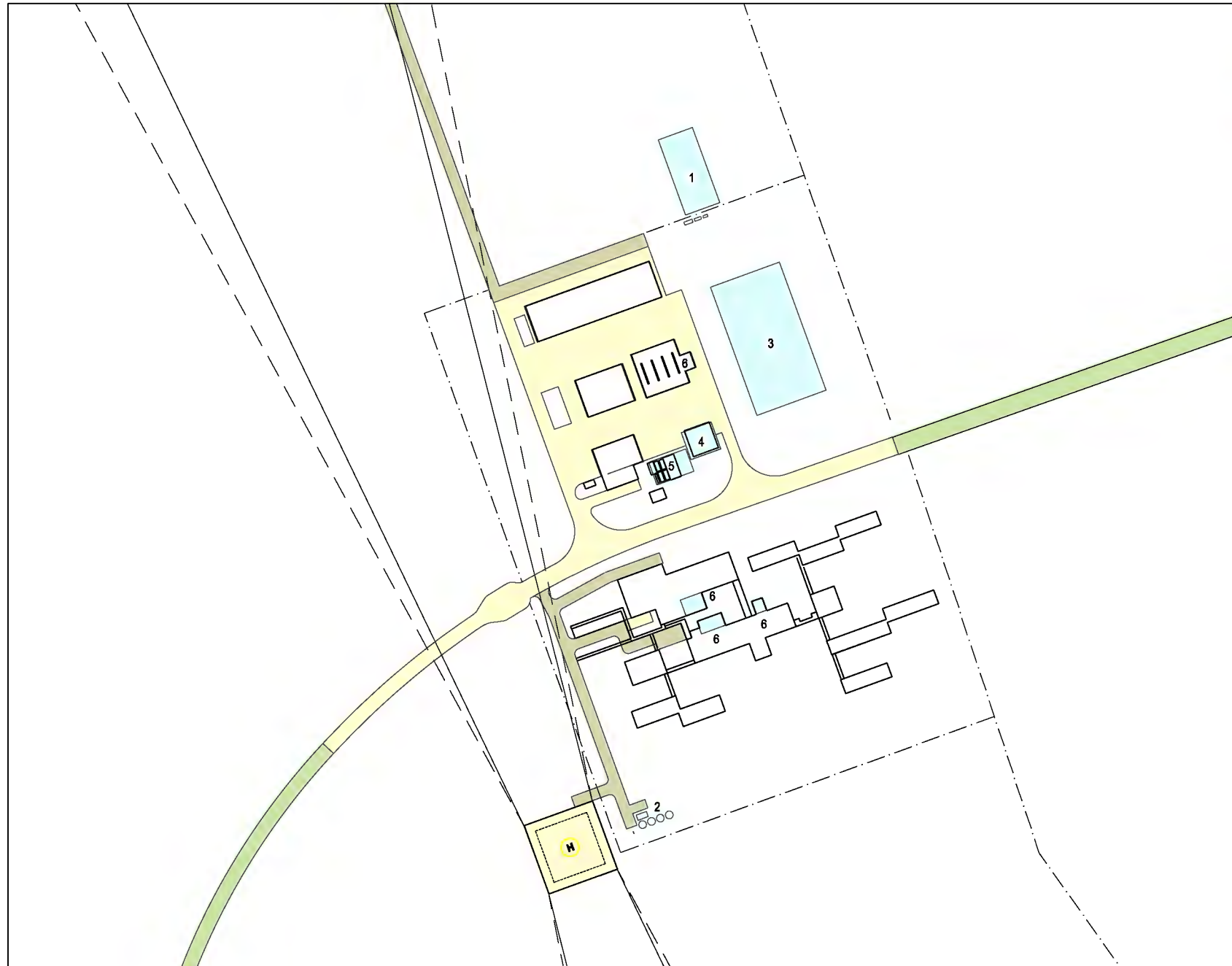
ATTACHMENT 10 | FLOOR PLAN  
| DELAMERE MAINTENANCE SHELTER



ATTACHMENT 10

FLOOR PLAN  
DELAMERE MAINTENANCE SHELTER





- SITE WORKS LEGEND**
- SERVICES INFRASTRUCTURE
  - SEALED PAVEMENT
  - UNSEALED PAVEMENT
  - CONCRETE PAVEMENT
  - CLEARING
  - EXISTING DELAWARE FACILITIES

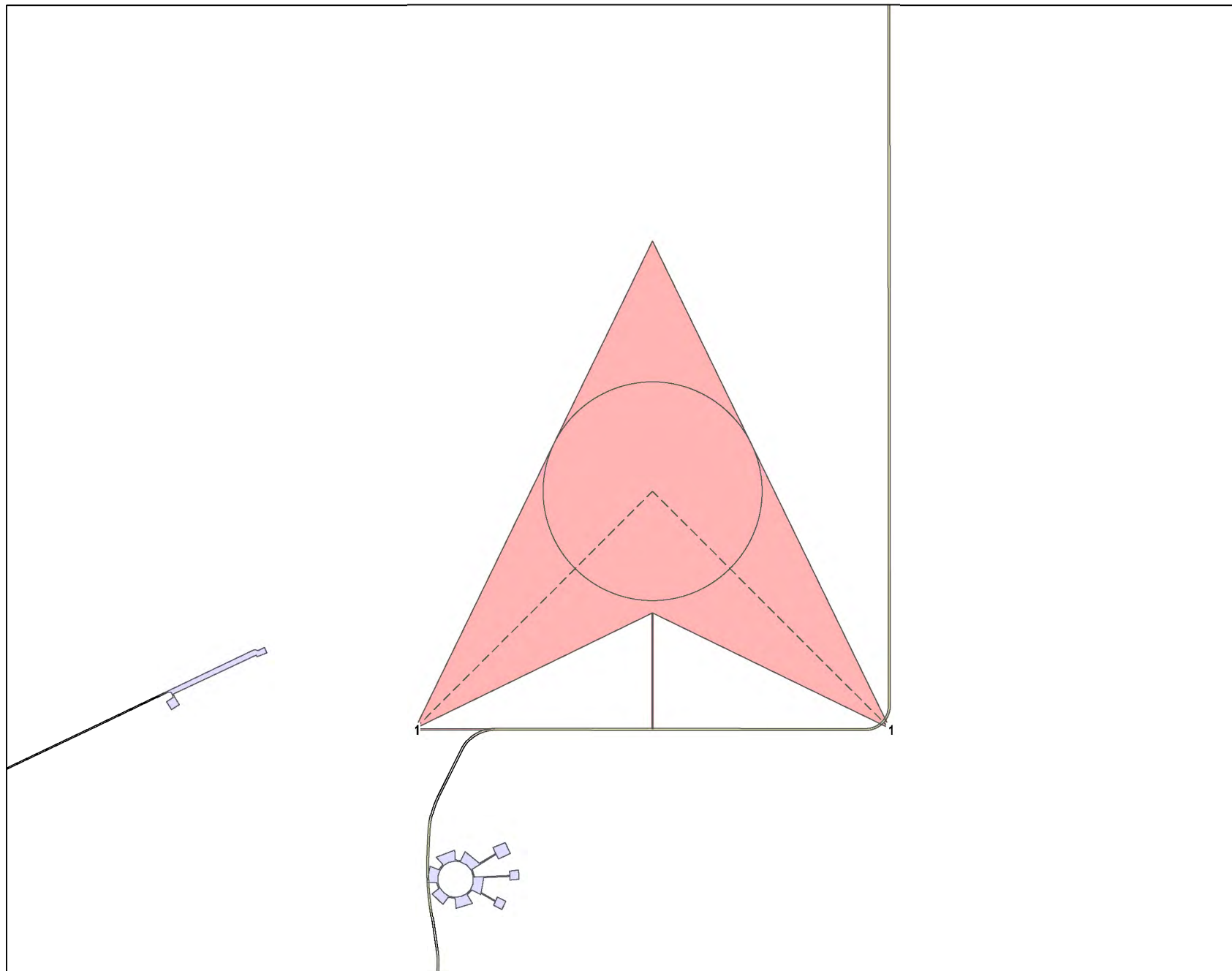
- 1 WASTEWATER MANAGEMENT
- 2 WATER SUPPLY, STORAGE & TREATMENT
- 3 SOLAR FARM
- 4 REFUEL POINT
- 5 GENSET & MAIN SWITCHBOARD
- 6 EXTERNAL PLANT (BUILDINGS)

ATTACHMENT 11 | **SITE PLAN**  
**KEY INFRASTRUCTURE**

- SITE WORKS LEGEND**
- SERVICES INFRASTRUCTURE
  - SEALED PAVEMENT
  - UNSEALED PAVEMENT
  - CONCRETE PAVEMENT
  - CLEARING
  - EXISTING DELAWR FACILITIES

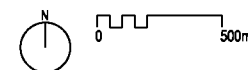
1 HIGH EXPLOSIVE IMPACT  
AREA TARGET SCORING  
TOWER

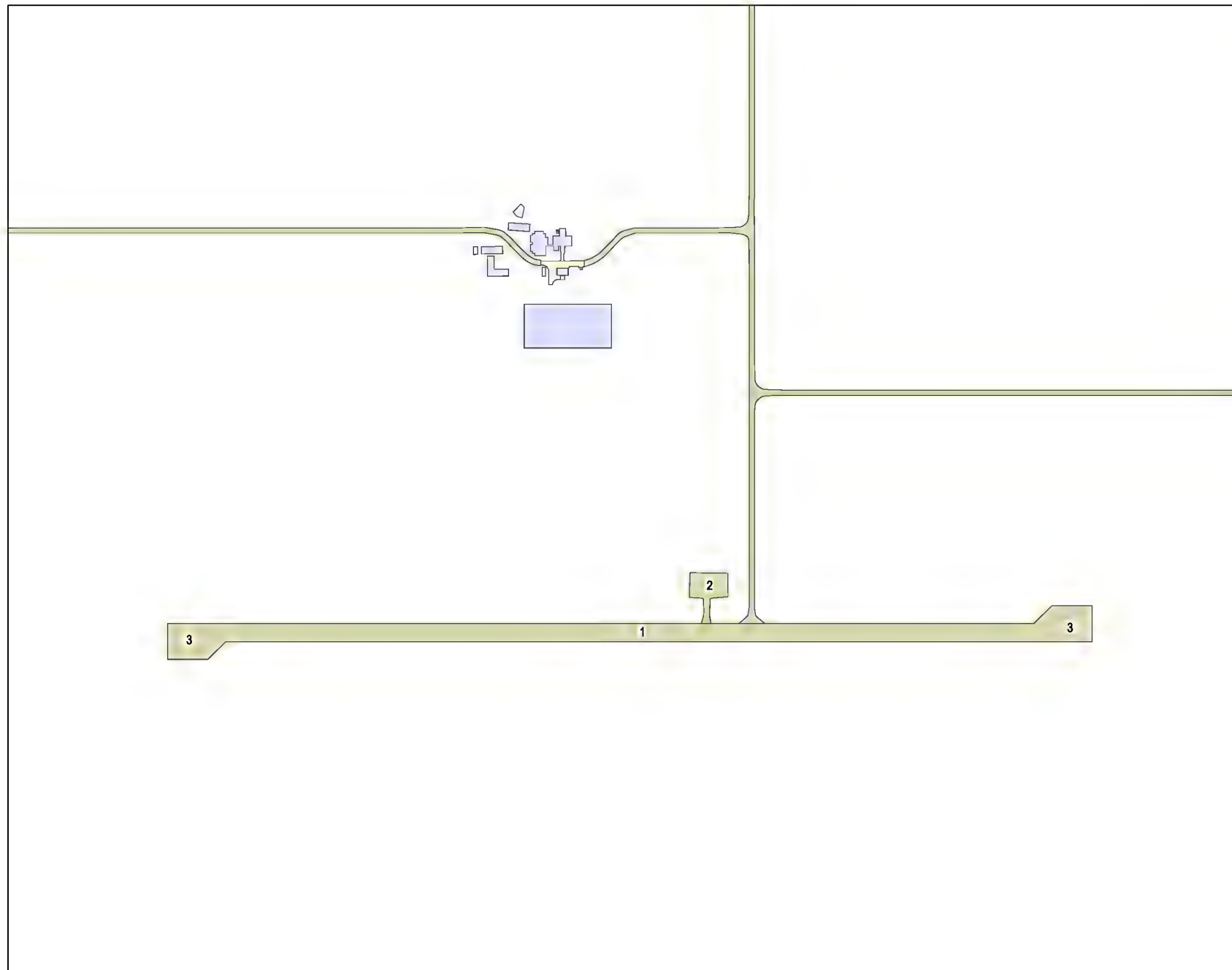
ATTACHMENT 12 | **SITE PLAN**  
**HIGH EXPLOSIVE IMPACT AREA**



ATTACHMENT 12

**SITE PLAN**  
**HIGH EXPLOSIVE IMPACT AREA**





- SITE WORKS LEGEND**
- SERVICES INFRASTRUCTURE
  - SEALED PAVEMENT
  - UNSEALED PAVEMENT
  - CONCRETE PAVEMENT
  - CLEARING
  - EXISTING DELAWR FACILITIES

- 1 RUNWAY
- 2 APRON
- 3 TURNING NODE

ATTACHMENT 13 | SITE PLAN  
AIRFIELD

ATTACHMENT 13 | SITE PLAN  
AIRFIELD

