



**Australian Government**  
**Department of Defence**

**LAND 4502 PHASE 1**  
**ADDITIONAL CH-47F CHINOOK**  
**FACILITIES PROJECT**

**RAAF BASE TOWNSVILLE, QUEENSLAND**

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

August 2018

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# Table of Contents

<b>Need for the Project</b>	<b>1</b>
Aim of the Project	1
Location of the Project	1
Need for the Project	1
<b>Proposed Facilities Solution</b>	<b>2</b>
Scope of Project Works	2
<b>Planning and Design Concepts</b>	<b>4</b>
Relevant Legislation, Codes and Standards	5
Land and Zoning	5
Structure	5
Mechanical Services	6
Hydraulic Services	6
Electrical Services	6
Fire Protection	7
Security Measures	7
Acoustics	7
Work Health and Safety	7
Materials and Furnishings	8
Landscaping	8
Childcare Provisions	8
Provisions for people with disabilities	8
Environmental Sustainability	8
<b>Potential Impacts</b>	<b>10</b>
<b>Consultation with Key Stakeholders</b>	<b>11</b>
<b>Cost Effectiveness and Public Value</b>	<b>12</b>
Project Costs	12
Project Delivery System	13
Construction Program	13
Public Value	13
Revenue	14
<b>Attachments</b>	<b>14</b>
1. Site plan	14
2. CH-47F Shelter 1	14
3. CH-47F Shelter 2	14
4. Supply Support facility	14
5. a. Refurbishment (Building 804, Ground Floor)	14
b. Refurbishment (Building 804, First Floor)	14
6. Refurbishment (Building 802)	14
7. Refurbishment (Building 238)	14
8. Car Parking	14
9. Tarmac Parking	14

# **LAND 4502 Phase 1 Additional CH-47F Chinook Facilities Project**

## **Need for the Project**

### **Aim of the Project**

1. The aim of the LAND 4502 Phase 1 Additional CH-47F Chinook Facilities Project (the Project) is to provide shelters and supporting infrastructure for three additional CH-47F Chinook helicopters and associated staff growth for 5<sup>th</sup> Aviation Regiment (5<sup>th</sup> Avn Regt) at RAAF Base Townsville, Queensland.

### **Location of the Project**

2. The proposed works are to be undertaken at RAAF Base Townsville, one of northern Australia's primary Defence installations. The Base is situated approximately four kilometres west of Townsville's Central Business District.

3. The proposed works are within the 5<sup>th</sup> Avn Regt precinct and are proposed to be built adjacent to existing maintenance and administrative facilities. A precinct site plan showing the location of the proposed works is provided at Attachment 1.

### **Need for the Project**

4. In March 2016, Defence received approval to urgently acquire three new CH-47F Chinook helicopters (CH-47F) to support 5<sup>th</sup> Avn Regt training and operations. The three additional CH-47F were subsequently procured and are now in service. They are based at RAAF Base Townsville and operated by 5<sup>th</sup> Avn Regt.

5. The 5<sup>th</sup> Avn Regt precinct at RAAF Base Townsville does not currently have facilities to support the additional CH-47F. Accordingly, the helicopters are currently exposed to the corrosive Townsville environment, there is no spatial provision for the additional personnel associated with the new helicopters, and logistic support elements are not consolidated. These factors combined contribute to a reduced operational life of the capability and inefficiencies in support elements of the CH-47F capability.

## Proposed Facilities Solution

### Scope of Project Works

6. From mid-2017, the Department of Defence (Defence) undertook comprehensive master planning, site investigations, stakeholder consultation, whole-of-life cost analysis, and design development to define the works required under the Project to address the facilities need.

7. This project proposes construction of new and refurbished facilities to meet the storage, security, working accommodation and infrastructure needs arising from the acquisition of three additional CH-47F. This proposal provides facilities for three functions that directly support the new capability:

- a. Command and Control
- b. Aircraft Storage
- c. Security.

8. To meet the identified need, options of adaptive reuse and new construction were considered during project development to determine the most appropriate whole of life outcome that addresses the operational needs. Attachment 1 shows the current 5<sup>th</sup> Avn Regt precinct with the present building numbers and functions discussed throughout this document. The works proposed to be delivered by this project include:

- a. **Two CH-47F Shelters.** The project proposes to provide two additional CH-47F shelters that will be sited to make maximum use of existing apron and proximity to maintenance hangars; an existing shelter will house one CH-47F. The shelters are also sited and sized to provide future growth opportunities as well as use of land that would be otherwise unsuitable due to noise and airfield obstacle clearance surfaces. See Attachments 2 and 3.
- b. **Consolidation of CH-47F supply support functions.** The project proposes to provide a Supply Support facility that has the same dimensions and structure as an aircraft shelter. This structure will still meet the requirements for Supply Support, but will provide future flexibility and value for money through a structure that could convert to an aircraft shelter in the future if required. See Attachment 4.

- c. **Working accommodation for additional personnel.** The project proposes to make maximum use of existing buildings to meet the working accommodation requirement associated with the increase of 44 personnel. This will see minor works primarily in the Unit's Chinook Maintenance Facility (Building 804-which was delivered in 2017) as well as use of the Unit's C Squadron Headquarters (Building 802-which was refurbished in 2016) to meet this requirement. See Attachment 5, 6 and 7.
  - d. **Car parking for additional personnel.** The project proposes to address the Unit's car parking requirements through provision of 57 car parking spaces. This comprises 44 spaces for additional personnel, and 13 compensatory spaces for car parks displaced through the infrastructure works. It is proposed that the majority of the additional car parking spaces be provided through an extension to the north of the existing main Unit Carpark, with the remaining provided at the Unit central carpark. See Attachment 8.
  - e. **Aircraft parking for three CH-47F.** The project proposes to deliver additional tarmac parking for the three additional CH-47F. The additional CH-47F tarmac parking is proposed to be delivered adjacent to the existing Chinook tarmac parking. See Attachment 9.
9. Three options were developed:
- a. **Option One – New and Refurbished Facilities (Preferred).** This option was preferred as it was within budget and provided the minimum facilities solution to meet the requirement. The option maximised functional use of available land within the 5<sup>th</sup> Avn Regt Precinct at RAAF Base Townsville, did not require demolition, and accommodated the workforce through minor refurbishment of existing facilities.
  - b. **Option Two – New Facilities.** This option was not preferred as it was over-budget, included demolition of existing facilities at the 5<sup>th</sup> Avn Regt Precinct, and, due to the increased level of construction, neither met the required program to support the CH-47F capability nor maximised use of available land to ensure opportunities for future development. This option also had an increased risk profile due to disruption of key infrastructure

and Base activities during the delivery phase. This option included CH-47F shelters, a new working accommodation building and associated car parking, and a replacement unit Headquarters building.

- c. **Option Three – Do Nothing.** This option was not preferred as it did not address the facilities requirement and resulted in a decreased capability through ongoing operational inefficiencies and a reduced life of the CH-47F from continued exposure to the elements.

10. **Option One** represents the best value for money solution to the Commonwealth to address the need from a whole of life perspective. This option meets the minimum facilities requirements and provides the most flexible future use of the 5<sup>th</sup> Avn Regt precinct. This option avoids the demolition and replacement of key unit infrastructure that is currently serviceable and fit for purpose, and would be costly to replace. This option also makes use of existing facilities for working accommodation and extends existing aircraft and personnel parking arrangements on brown field sites.

## Planning and Design Concepts

- 11. The philosophy for the design of the proposed works is based on:
  - a. providing cost-effective, functional, low maintenance, energy efficient design options compatible with proposed functions and existing aesthetics.
  - b. where possible, adopting conventional construction techniques and materials commonly used by the construction industry and consistent with those already used.
  - c. where possible, capitalise on opportunities for refurbishment of existing available spaces.
  - d. applying appropriate durability measures to reduce ongoing maintenance and achieve the proposed design life.
  - e. providing flexible services and infrastructure to accommodate an appropriate level of growth.
  - f. siting facilities to provide future flexible use of the site.

## **Relevant Legislation, Codes and Standards**

12. The following legislation, standards, codes and guidelines are applicable:
- a. *Environmental Protection and Biodiversity Conservation Act 1999* (Cth).
  - b. *Fair Work (Building Industry) Act 2012* (Cth).
  - c. *Work Health and Safety Act 2011* (Cth).
  - d. *Disability Discrimination Act 1992* (Cth).
  - e. *Fair Work Act 2009* (Cth).
  - f. National Construction Code - Building Code of Australia 2016.
  - g. Defence Manual for Infrastructure Engineering Electrical (MIEE).
  - h. Smart Infrastructure Manual.
  - i. Defence Estate Quality Management System.
  - j. Defence Manual of Fire Protection Engineering (MFPE).
  - k. Australian Government CASA Manual of Standards (MOS) Part 139.
  - l. National Environmental Protection Measure (NEPM) 1999 as amended 2013.
  - m. Defence Contamination Management Manual- March 2018.
13. Subject to Parliamentary approval, an accredited Building Certifier will certify the compliance of the design and the compliance of the completed works.

## **Land and Zoning**

14. The proposed works are consistent with uses prescribed in relevant Defence zoning instruments, including the Townsville Area Zone Plan, and the Defence Estate Principles of Development. The Project buildings elements were considered and sited by a Defence siting board held on 24 January 2018.

## **Structure**

15. The structural design is based on action effects prescribed in applicable Australian Standards and reference guides. The proposed new facilities will be framed using tilt-up concrete walls with a slab on ground. Roof framing will consist of rafters supporting steel



purlins and steel roof sheeting. Structural stability will be achieved through roof bracing to the concrete tilt-up walls. Footing design has considered the ground conditions identified through geotechnical investigation.

## **Mechanical Services**

16. Mechanical services for each building have been designed to meet the specific requirements of the proposed project and the mandatory requirements in accordance with the relevant Australian Standards and the Building Code of Australia. The mechanical services within the buildings comprise dehumidification and ventilation equipment, compressed air equipment, ventilation fans, smoke ventilation equipment and associated controls. These services will provide maximum thermal comfort to occupants undertaking maintenance duties.

## **Hydraulic Services**

17. The sanitary plumbing and drainage system for the aircraft shelters and the supply support building has been designed in accordance with Australian Standards. The trade waste system has been designed in accordance with the Manual of Fire Protection Engineering. Domestic potable cold-water supply will be provided from the existing site main. There is a designated connection point for all isolation valves, main water meter and an adjustable pressure reduction valve. A sub meter and suitable back-flow prevention device will be provided to each shelter.

## **Electrical Services**

18. Electrical services for each building have been designed to meet the specific requirements of the Project, the relevant Australian Standards and the Building Code of Australia. The electrical services external to the buildings comprise alterations and additions to the site high voltage network and incorporation of a new transformer substation on the 5<sup>th</sup> Avn Regt ring. The electrical services within the buildings comprise general purpose lighting and power installations; special purpose power installations at normal voltage and frequency; special purpose power installations at 400 Hz and associated frequency conversion equipment; exit and emergency lighting installations.

## **Fire Protection**

19. Fire detection and protection for the aircraft shelters and supply support building has been addressed through compliance with the Manual of Fire Protection Engineering for facility-specific asset protection requirements, and the Building Code of Australia for fire safety matters not directly regulated in the MFPE. The aircraft shelters and supply support building will be provided with dry fire detection, external fire hydrants, internal fire hose reels, internal foam fire hose reels and portable fire extinguishers. A fire hydrant booster will be installed in accordance with the relevant Australian Standard.

## **Security Measures**

20. The security design of the new shelters will be provided to the equivalent standard as surrounding facilities on site. Asset protection will replicate similar facilities with a Type 1A intruder alarm system and mechanical access control. CCTV coverage will view the external apron areas once again replicating similar facilities on Base.

## **Acoustics**

21. The new facilities are designed in consideration of the Building Code of Australia and relevant Australian Standards for acoustics. Acoustic separation has been considered between rooms, as consistent with the Project. Acoustic treatment to the building envelope shall ameliorate operational aircraft and rain noise.

## **Work Health and Safety**

22. The Project will comply with the *Work Health and Safety (WHS) Act 2011 (Cth)*, Work Health and Safety (Commonwealth Employment – National Standards) Regulations, and relevant Defence policies. 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. Safety aspects of the Project have been addressed during the design development process and have been documented in a Safety in Design report. A Work Health Safety Plan will be required to be developed for the construction phase prior to the commencement of any construction activities.

## **Materials and Furnishings**

23. External walls for new buildings will be tilt-up precast concrete panels and coloured blockwork. Aluminum louvres will ensure continuous cross ventilation to ameliorate the environmental performance of these spaces. Prefinished steel roofing, flashing, cladding and rainwater goods complete a waterproof envelope that is cyclone resistant. Furnishings to new and repurposed spaces are in accordance with the identified requirements of users.

## **Landscaping**

24. The surrounds of the new works will be landscaped to match the existing flightline environmental character. All soft landscaping areas will be grassed, providing a low maintenance, water sensitive approach. Precautions will be taken during construction to avoid compromising environmental sensitivities by adopting landscaping practices in accordance with local environmental conditions and the Construction Environmental Management Plan.

## **Childcare Provisions**

25. The acquisition of the new aircraft resulted in a small (44 persons) increase in Defence personnel numbers on the Base. Existing childcare services on Base and in the community will be used by these personnel if required. Therefore, there is no requirement for additional childcare facilities on RAAF Base Townsville as a result of this project.

## **Provisions for people with disabilities**

26. In accordance with the Building Code of Australia, Australia Standard 1428.1, the *Disability and Discrimination Act 1992* (Cth) and standard Base practice, access to the aircraft shelters and supply support building will be via a continuous path of travel for people with a disability from the Headquarters building.

## **Environmental Sustainability**

27. Defence is committed to Ecologically Sustainable Development, and reducing greenhouse gas emissions. The ecologically sustainable development objectives for the

Project are to optimise energy efficiency and minimise resource use to reduce greenhouse gas emissions. These objectives are to be achieved in accordance with the Building Code of Australia, and the Defence Environmental Strategic Plan and Building Energy Performance Manual policies. These measures include:

- a. **Energy targets:** The performance and targets for saving energy will be structured around the Building Code of Australia and relevant Defence policies. The building architecture minimises energy consumption through efficient design including the use of natural ventilation and lighting where appropriate.
- b. **Measures to reduce energy and water use:** The design maximises the use of natural ventilation where appropriate and utilises mechanical ventilation and dehumidification systems with controls that respond to occupancy and ambient conditions. Lighting systems will utilise energy efficient fittings and control systems and incorporate natural lighting when suitable. Water usage shall be minimized by using water efficient fixtures and fittings.
- c. **Re-use of existing structures:** Administrative and maintenance functions relating to the Project are being accommodated in existing buildings with predominantly furniture and equipment solutions and minimal built intervention.
- d. **Demolition and disposal of existing structures:** Demolition of existing built infrastructure and the generation of construction waste will be minimised through effective planning, design and reuse. Hazardous waste, including asbestos and PFAS contaminated soil, will be disposed of in accordance with their relevant regulations and Defence policies.

28. The Defence Engineering and Environment Branch has considered the proposed works for all sites against the Commonwealth's Environment Protection and Biodiversity Conservation Act 1999 (Cth) and has determined that a referral under the Act will not be required for this project.

29. An Environmental Review prepared in 2017 did not identify any significant environmental concerns for the facilities proposed under the project. The design of the

proposed works has specifically considered the outcomes and recommendations of the Environmental Report and has incorporated features to mitigate environmental impacts.

30. The Project will be managed in accordance with the Defence Environmental Management framework. The building contractor will be required to produce a Construction Environmental Management Plan (CEMP) to articulate how the contractor will control environmental measures during construction. Furthermore, the building contractor's CEMP is a contractual requirement and compliance with the CEMP will be periodically audited throughout the project. The building contractor will not be able to commence construction activities until a Defence Environmental Clearance Certificate is issued by the Regional Environmental Officer.

## Potential Impacts

31. The proposal will generate short-term employment opportunities predominantly in the building, construction and unskilled labour markets in the Townsville area. It is expected that approximately 50 personnel will be directly employed for the duration of the construction activities, which will also generate some off-site job opportunities through the manufacture and distribution of materials over the construction period. Defence anticipates that local building sub-contractors will be employed on a large proportion of the construction works generating further employment opportunities. This will provide a positive economic impact to small and medium enterprises in the Townsville region.

32. The building contractor will be required to manage construction traffic routes in accordance with the Site Management Plan to minimise any disruption to the local community during the construction period. The construction site is located well within the base boundary and construction activities are not expected to cause noticeable disruption to businesses and residences adjacent to RAAF Base Townsville. There are two entrances to RAAF Base Townsville, both of which connect onto Ingham Road in Townsville. This area is zoned as commercial/industrial so it is anticipated that construction traffic will have limited impact on the local community.

33. Defence has conducted rigorous assessments to identify potential environmental and local community impacts, and propose suitable mitigation measures. These include:

- a. **Visual Impacts:** The provision of the new aircraft shelters and supply support building on the airfield presents no adverse visual impact. The

building is of similar scale and materials to match existing adjacent aircraft shelters to ensure a visually cohesive built environment.

- b. **Noise Impacts:** The new aircraft shelters and supply support building, and the activities contained therein, do not generate any significant noise. The building is orientated away from the airport runway and tarmac parking area and accordingly, personnel within the open shelters are not directly exposed to operating aircraft noise.
- c. **Heritage Impacts:** The building location has no heritage impact. The new aircraft shelter and supply support building is positioned on a flat, undeveloped brownfield site within the airfield.
- d. **Traffic, Transportation and Road Impacts:** Road design and traffic management strategies have focused on safety and amenity, ensuring there is minimal conflict between users. Pedestrians are separated from vehicular traffic by means of dedicated walkways. Road pavements have been designed in accordance with applicable Australian Standards and design vehicle turning paths. Additional car parking spaces, including a Person With Disability (PWD) parking space, will be provided to accommodate additional personnel. Off Base there is no significant impact anticipated on local traffic due to the Project.
- e. **Existing Local Facilities:** The development expands on existing adjacent facilities within the precinct to enhance operational capabilities at the airfield.

34. The Project will not have a significant impact on existing environmental and heritage values, and is not required to be referred to the Minister of Environment and Energy under the *Environmental Protection and Biodiversity Conservation Act 1999* (Cth).

## Consultation with Key Stakeholders

35. Defence has developed a community consultation and communications strategy that recognises the importance of providing local residents and other interested stakeholders an opportunity to provide input into, or raise concerns relating to the proposed works.

36. Defence has engaged or will engage with a variety of internal and external stakeholders during project development and delivery. These include:

- a. Townsville City Council.
- b. State Member for Townsville.
- c. Federal Member for Herbert.
- d. Department of State Development, Manufacturing, Infrastructure and Planning.
- e. Townsville Airport Propriety Limited (TAPL).
- f. Chamber Community Aviation Consultation Group (CCACG).
- g. Department of Transport and Main Roads.
- h. Origin Energy.
- i. Townsville Water.
- j. Townsville Chamber of Commerce.
- k. Bindal and Wulgurukaba People.

37. As part of this communication strategy, the Project will be incorporating community information sessions and local newspaper advertisements.

## **Cost Effectiveness and Public Value**

### **Project Costs**

38. The estimated total capital out-turned cost of the project is \$49.9 million (excluding Goods and Services Tax). This includes management and design fees, construction costs, information and communications technology, furniture, fittings, equipment, contingencies, and a provision for escalation.

39. An increase in operating costs is expected as a result of the proposed works. This is due to the new facilities having a need for computers, estate upkeep, utilities costs and allowance for future repair and maintenance of furniture and finishes.

## **Project Delivery System**

40. Subject to Parliamentary approval, a Head Contract (construct only) form of contract is planned to deliver the works. A Head Contractor will be appointed to procure trade contractors, and manage the construction of the works. A Project Manager and Contract Administrator will be appointed to manage the delivery phase of the works.

41. The Head Contractor form of delivery provides the Commonwealth, via a two stage competitive tender process, an opportunity to encourage local industry engagement with small to medium enterprises construction for the subcontract packages.

## **Construction Program**

42. Subject to Parliamentary approval, design activities are expected to be completed by late 2018. Construction activities are expected to commence in early 2019 and be completed in late 2020.

## **Public Value**

43. Defence has comprehensively assessed public value, opportunities and benefit to the community as a result of the proposed works:

- a. **Meeting capability needs:** The Project will support the capability requirement by providing shelters for aircraft, working accommodation for additional personnel, an associated aircraft and vehicle parking.
- b. **Employment opportunities:** This project will employ a diverse range of skilled consultants, contractors and construction workers that may also include opportunities for up-skilling and job training to improve individual skills and employability on future projects. A high degree of local industry engagement is expected based on similar project that have recently been delivered at RAAF Base Townsville.
- c. **Economic impacts:** The Project is anticipated to have potential economic benefits to the local region through local procurement of construction materials and employment of local trades and service providers. In addition, the introduction of 44 Defence personnel and their families into the community will also have positive economic benefits.



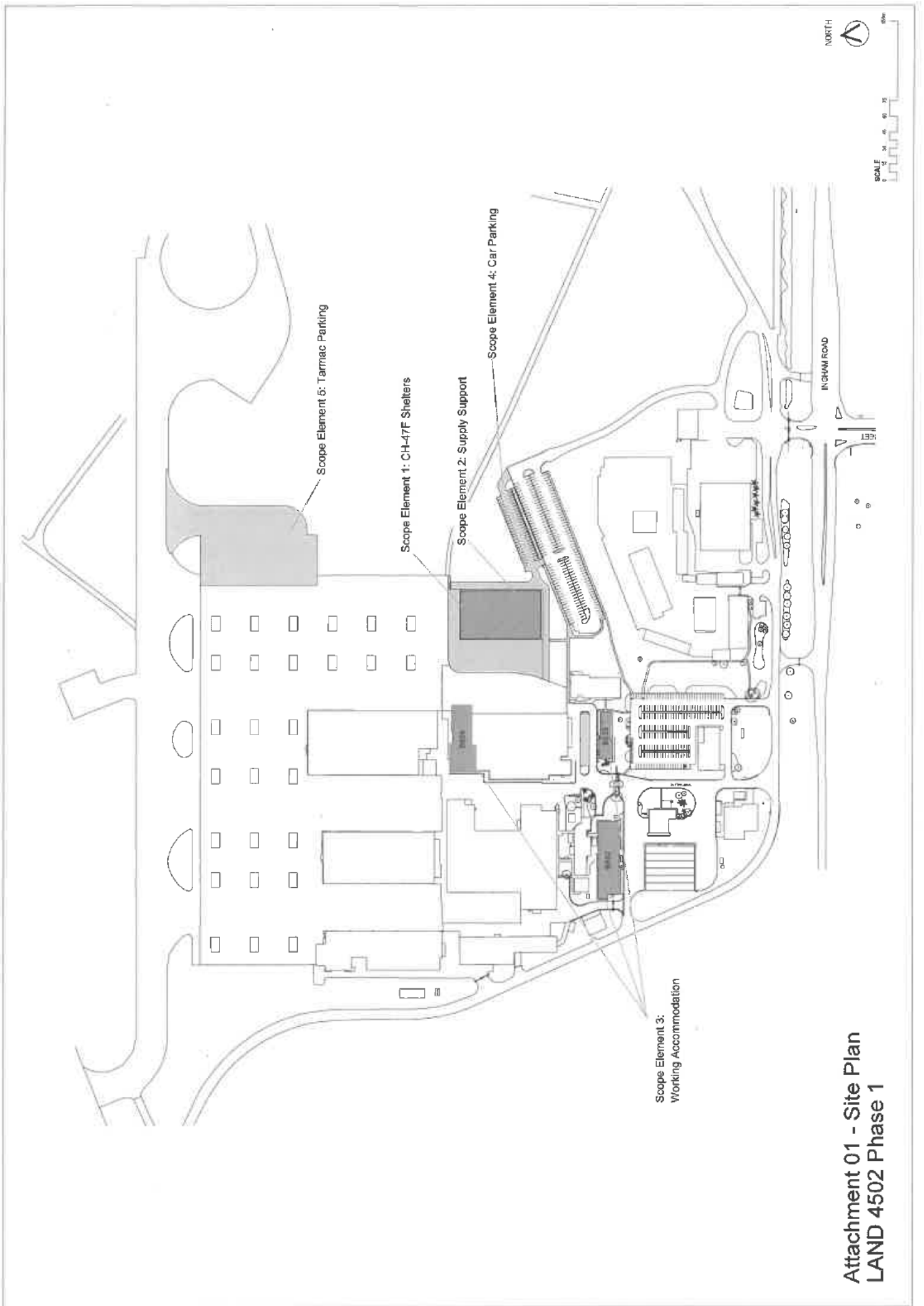
- d. **Local industry and Indigenous business involvement opportunities:**  
The Project has engaged a local based design team to develop the design documentation, which has already provided local economic benefits. It also considers local industry capability to maximize their opportunity for involvement.
- e. **Existing infrastructure services:** There is no significant public value for existing infrastructure services.

## Revenue

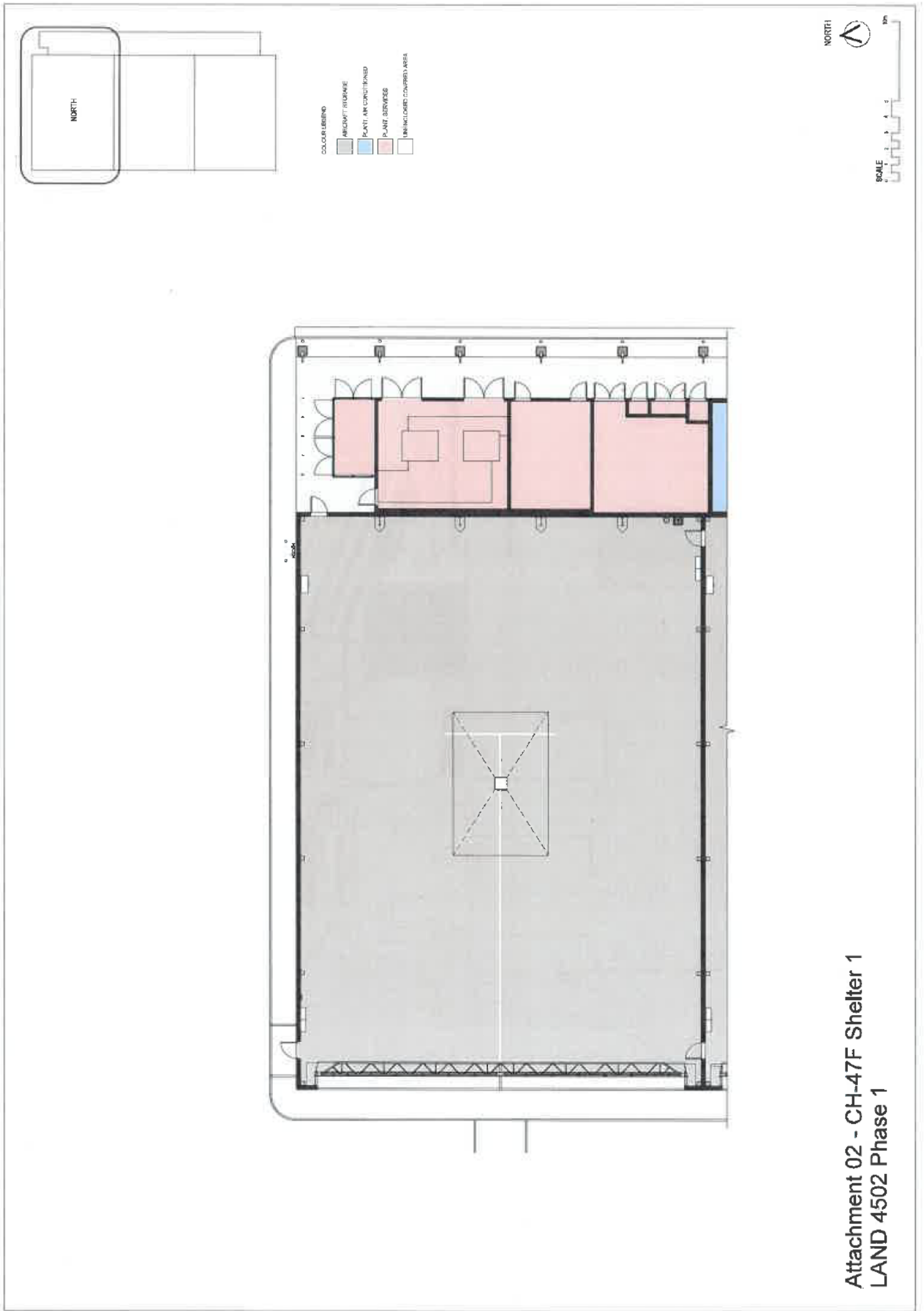
- 44. No revenue is expected to be derived from the Project.

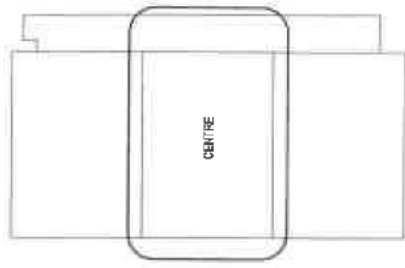
## Attachments

- 1. Site plan
- 2. CH-47F Shelter 1
- 3. CH-47F Shelter 2
- 4. Supply Support facility
- 5.
  - a. Refurbishment (Building 804, Ground Floor)
  - b. Refurbishment (Building 804, First Floor)
- 6. Refurbishment (Building 802)
- 7. Refurbishment (Building 238)
- 8. Car Parking
- 9. Tarmac Parking



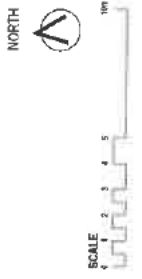
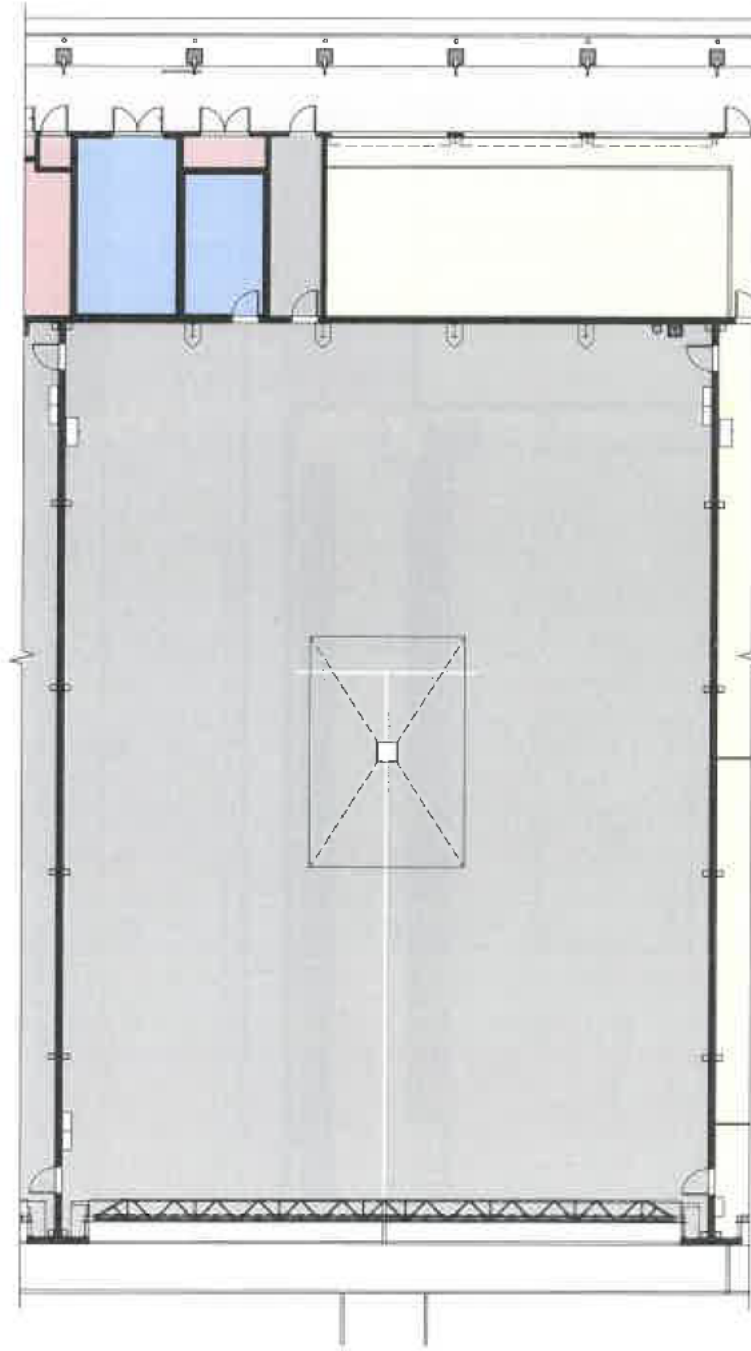
Attachment 01 - Site Plan  
LAND 4502 Phase 1

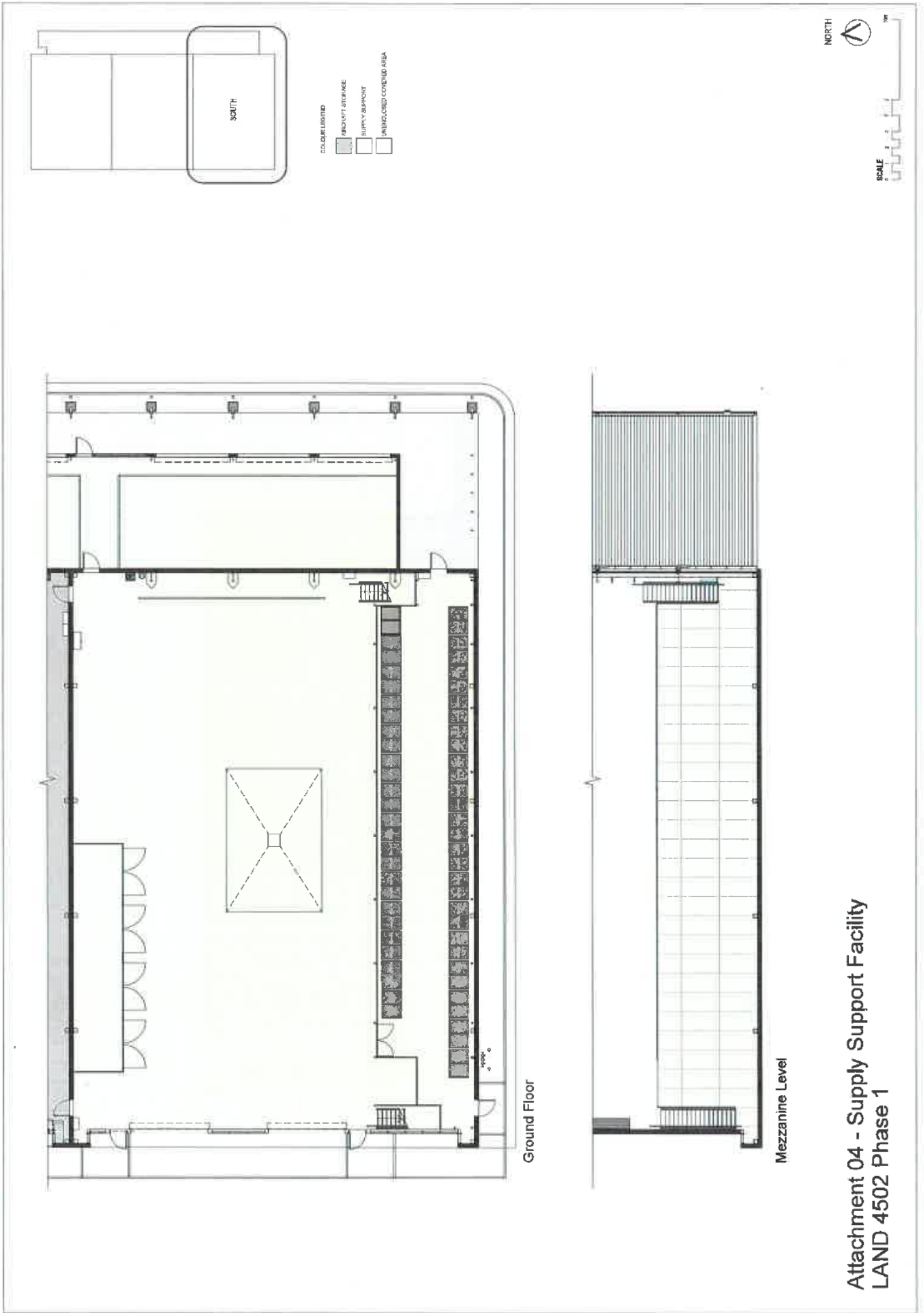




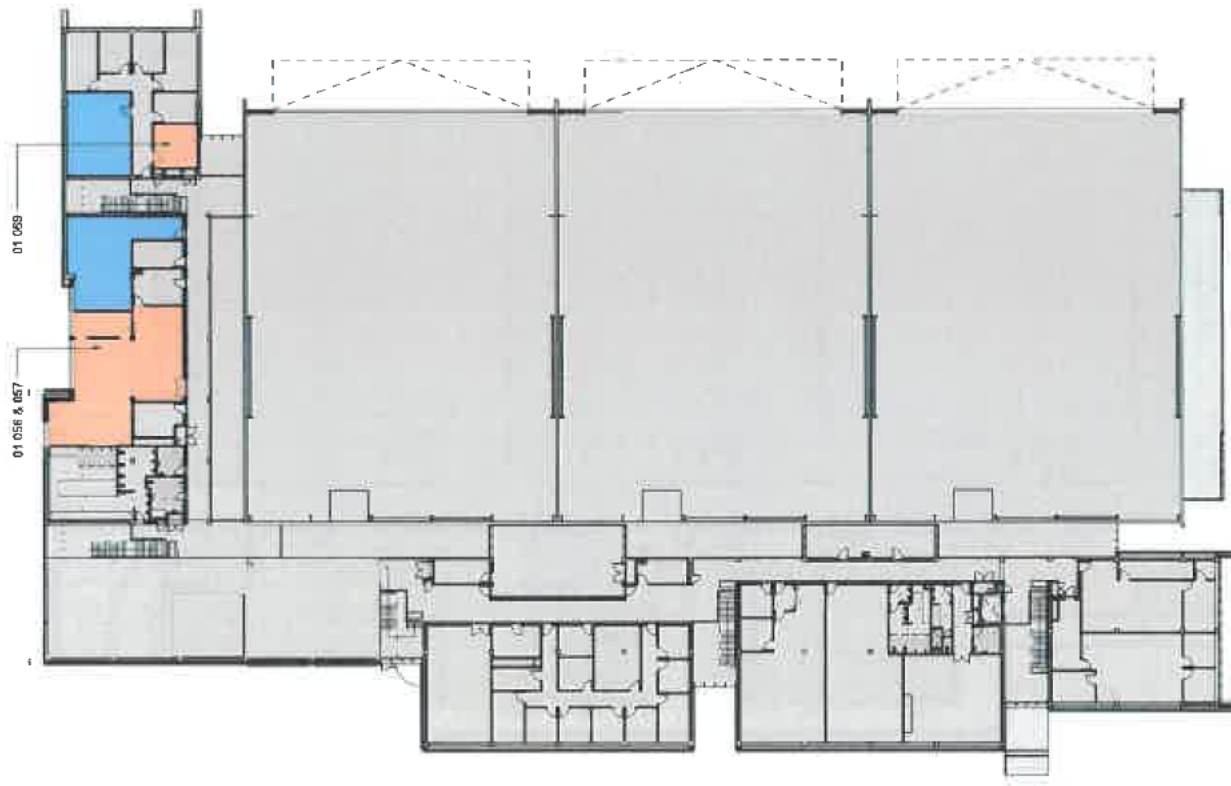
COLOR LEGEND

[Grey Box]	ARCHITECT STORAGE
[Blue Box]	PURCHASER STORAGE
[Pink Box]	PURCHASER SERVICES
[White Box]	SUPPLY SUPPORT
[White Box]	UNENCLOSED COVERED AREA



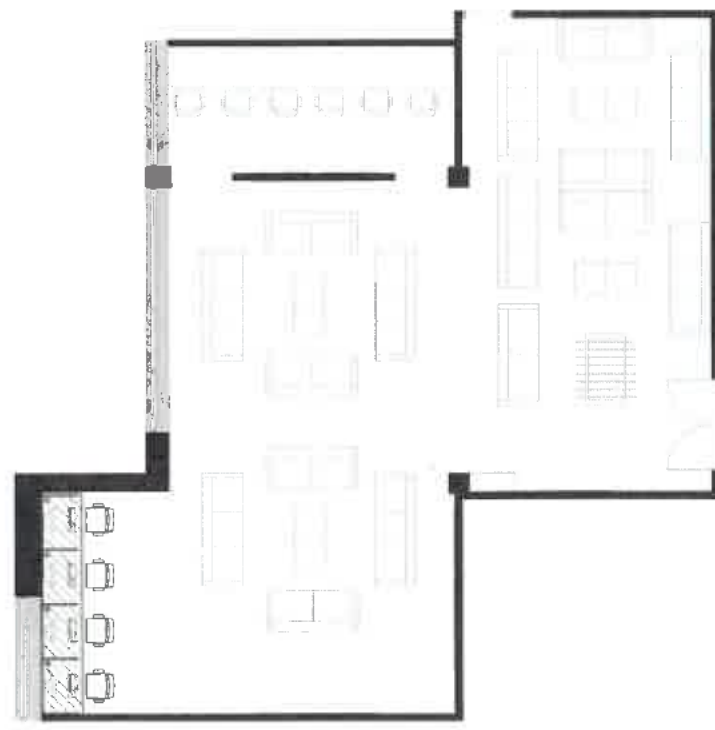






COLOUR LEGEND

- L4502 Garages
- L4502 Work
- No Work Required



01 056 & 057 Plan



01 069 Plan



Attachment 05b - Refurbishment, Building 804 (First Floor)  
LAND 4502 Phase 1





First Floor



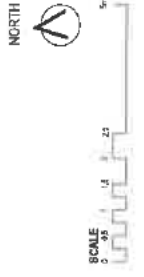
Ground Floor

COLOR LEGEND

Blue	L-6022 Subarea
Orange	L-6022 Yards
Grey	No Work Proposed



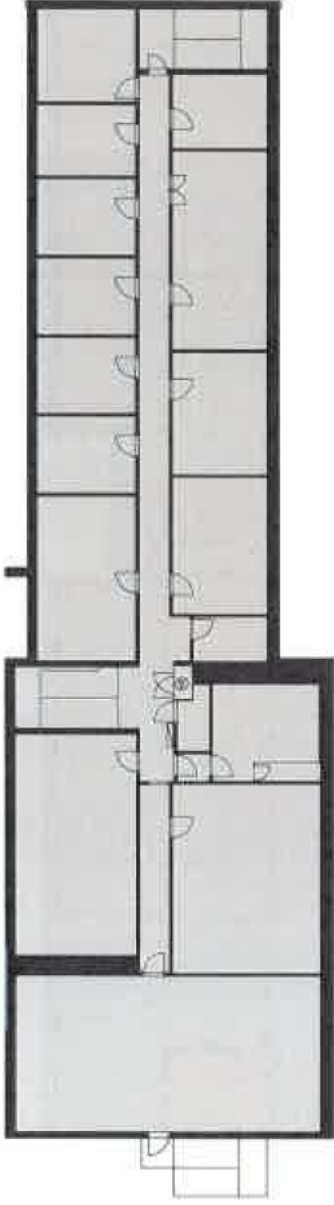
GF 007 Plan



Attachment 06 - Refurbishment, Building 802  
LAND 4502 Phase 1



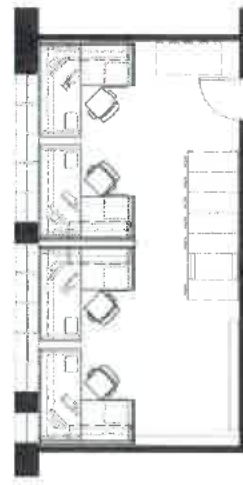
COLOR LEGEND  
Light Gray  
No Work Required



First Floor

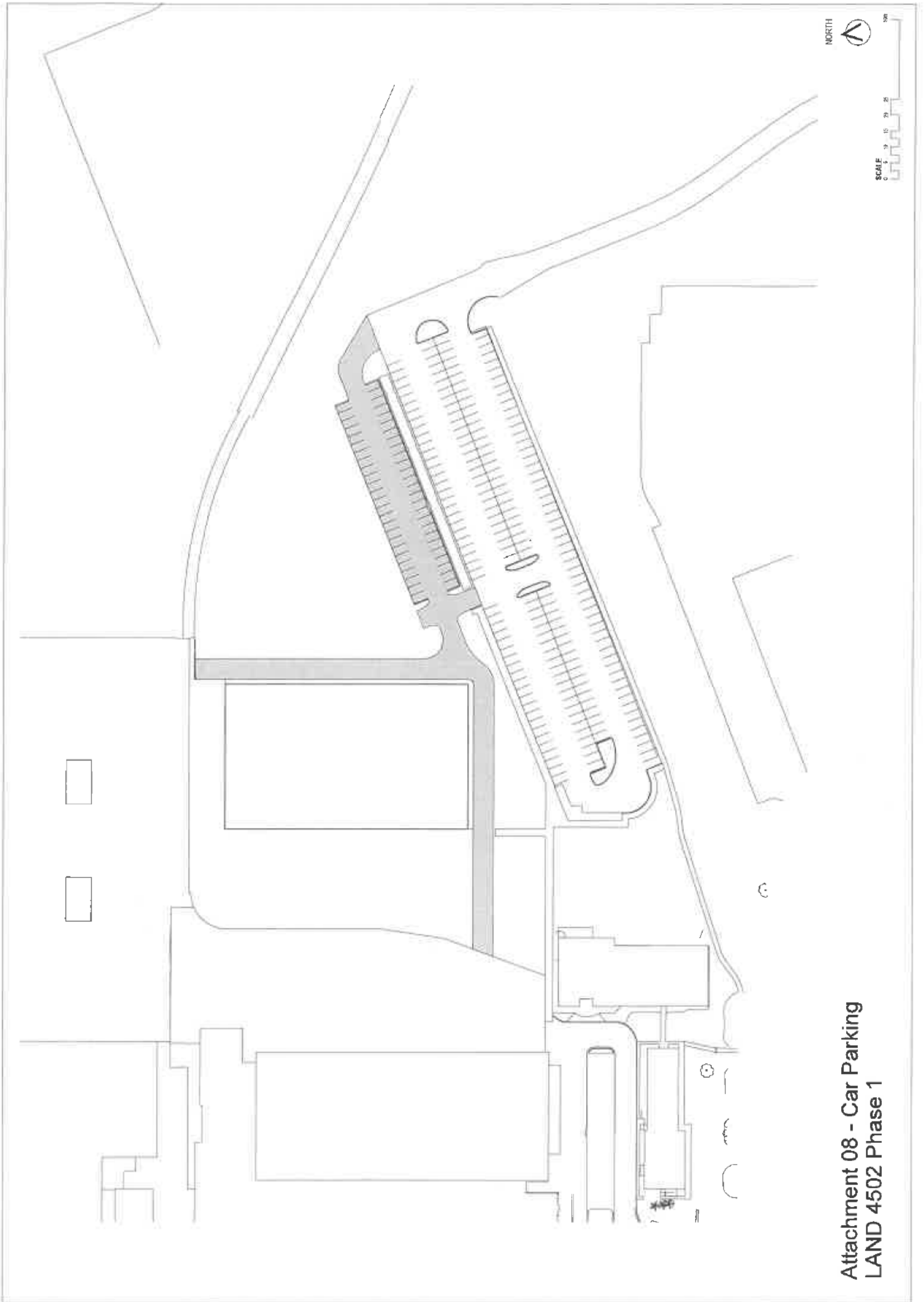


Ground Floor

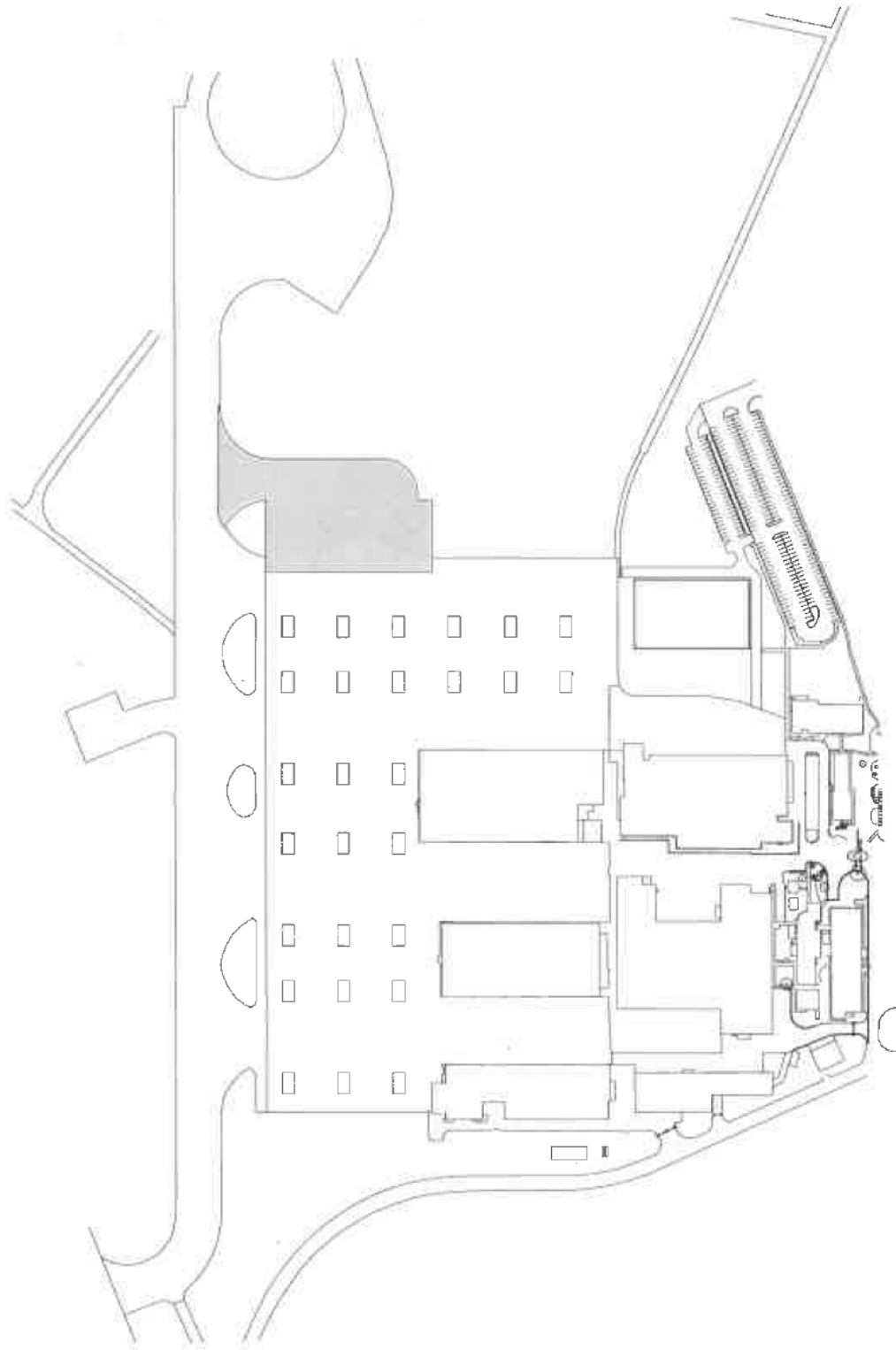


GF 003 Plan





Attachment 08 - Car Parking  
LAND 4502 Phase 1



Attachment 09 - Tarmac Parking  
LAND 4502 Phase 1