Australian Government
Department of Defence
Defence Support Group

RAAF BASE EDINBURGH REDEVELOPMENT STAGE 2

ADELAIDE, SA

STATEMENT OF EVIDENCE TO THE PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS

DEPARTMENT OF DEFENCE
CANBERRA, ACT
February 2009

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ACRONYMS AND ABBREVIATIONS

BCA	Building Code of Australia
CCTV	Closed Circuit Television
DSTO	Defence Science and Technology Organisation
ESD	Ecologically Sustainable Development
ETSA	Electricity Trust South Australia
MFPE	Manual of Fire Protection Engineering
OLA	Ordnance Loading Apron

RAAF BASE EDINBURGH
REDEVELOPMENT STAGE 2
ADELAIDE, SOUTH AUSTRALIA

PART A – JUSTIFICATION

INTRODUCTION

1. This evidence to the Parliamentary Standing Committee on Public Works presents a proposal for the redevelopment of RAAF Base Edinburgh, Adelaide, South Australia, which together with the Defence Science and Technology Organisation (DSTO) Edinburgh forms the Edinburgh Defence Precinct. The proposal will address existing shortcomings relating to working accommodation, base security and engineering services.

PROJECT OBJECTIVES

2. The objective of this project is to provide a range of new and refurbished facilities to meet the functional requirements of several Air Force units, enhance base security and upgrade engineering services.

BACKGROUND

3. RAAF Base Edinburgh provides maritime surveillance operations throughout Australia's airspace, supports combat operations, and enhances and extends the Australian Defence Force's combat capability through the provision of comprehensive, timely and integrated support. The base is currently the home base for No 92 Wing, No 87 Squadron and No 24 Squadron. No 462 (Information Warfare) Squadron will be relocating to the Edinburgh Defence Precinct from Canberra in 2012.

4. A previous redevelopment, the RAAF Base Edinburgh Redevelopment Stage 1 project, undertaken between 2002 and 2004, provided for the replacement of aged, dysfunctional and overcrowded facilities, and included a minor upgrade to elements of the base infrastructure.

5. The RAAF Base Edinburgh Redevelopment Stage 2 project was approved by the Australian Government in December 2008. The project comprises nine elements which will provide new working accommodation for No 462 and No 87 Squadrons, new and refurbished working accommodation for No 24 Squadron and No 92 Wing, a new Air Traffic Control tower, two new ordnance loading aprons, improved base security, and upgrade to engineering services infrastructure. The demolition of redundant facilities is also included in the project.

NEED FOR THE WORKS

6. The redevelopment project will support Defence capability by addressing the following needs which are associated with providing operations from RAAF Base Edinburgh:

a. **Project Element 1 – No 462 Squadron Facility**. No 462 Squadron is currently located at the Defence Reserve Depot at Allara Street Reid, Canberra, where it has occupied a number of facilities on a temporary basis since its formation in 2005. Government approval has been given for the relocation of No 462 Squadron to the Edinburgh Defence Precinct. No 462 Squadron requires a permanent facility for 100 personnel in the Electronic Warfare Precinct at DSTO Edinburgh.

b. **Project Element 2 - No 87 Squadron Facility**. No 87 Squadron currently occupies an interim facility in the northern domestic area of the base. To perform its role, No 87 Squadron requires a permanent facility appropriate to its function.

c. **Project Element 3 - No 92 Wing Air Crew Facilities**. The existing air crew facilities used by No 92 Wing have a number of deficiencies, some related to occupational health and safety, but principally related to inadequate working space for the existing crew. Additional air crew rooms, briefing room space and common rooms are required for the aircrews.

d. **Project Element 4 - No 24 Squadron Facilities**. The existing No 24 Squadron facilities do not meet the squadron's training and working accommodation needs. No 24 Squadron requires a range of multi-purpose class rooms, areas for specialist training, training support and administration to fulfil its training role.

e. **Project Elements 5 - Air Traffic Control Tower**. The current Air Traffic Control tower has a range of occupational health and safety deficiencies, including Building Code of Australia (BCA) and Defence's *Manual of Fire Protection Engineering* (MFPE) non-compliances. A new Air Traffic Control tower building for air traffic control services is required.

f. **Project Element 6 - Ordnance Loading Aprons**. RAAF Base Edinburgh has only one facility that is revetted and dedicated as an Ordnance Loading Apron (OLA). Two new purpose built OLAs are required to provide the required capability.

g. **Project Element 7 - Passive Defence Upgrade**. Current passive defence features and measures do not meet contemporary standards for providing the necessary security or access control to various areas of the base. Improvements are required to enhance the passive defence measures.

h. **Project Element 8 – Engineering Services Infrastructure**. Some of the engineering services including roads, hydraulic services, electrical services and communications are a legacy of the original development of the base post World War II. Improvements to capacity and the replacement of dilapidated services are required to provide reliable services.

i. **Project Element 9 – Demolition of Facilities**. A number of buildings have either reached the end of their economic life or are surplus to requirements. These buildings are not suitable for reuse to satisfy project requirements.

OPTIONS CONSIDERED

7. The primary options considered for the project elements were to either adaptively re-use existing facilities through refurbishment and modification, or to construct new facilities.

8. When comparing adaptive re-use with new construction, assessments considered the following aspects:

a. Capital expenditure and lifecycle costs of the adaptive re-use compared to new construction;

b. Operational functionality in relation to the purpose of the facility and its ability to meet changing requirements;

c. Ecologically Sustainable Development (ESD) initiatives such as, building orientation, footprint and building fabric, and the practical application of these solutions;

d. The design life of the building structure, and services.

9. For the RAAF Base Edinburgh Redevelopment Stage 2 project adaptive re-use assessment included the following options:

a. **No 87 Squadron**. Continued utilisation of the existing No 87 Squadron interim facility was assessed; however, the facility was considered unsuitable for extension to accommodate the full squadron personnel numbers. The facility was designed only for short term use as a demountable structure. The current facility is also remote from other functional areas in Aerospace Operational Support Group.

b. **No 92 Wing**. The existing No 92 Wing working accommodation in building No 425 and building No 426 is being retained and refurbished as part of the proposed solution.

c. **No 24 Squadron**. The existing building No 270, administration building, is to be retained and refurbished.

d. **Air Traffic Control Tower**. The deficiencies in the existing Air Traffic Control tower relate to fire safety and BCA compliance. The existing tower could not be economically upgraded.

DESCRIPTION OF THE PROPOSAL

10. The nine elements or works comprising this proposal are as follows:

a. **Project Element 1 – No 462 Squadron**. Provision of a new permanent facility for No 462 Squadron which is being relocated from Canberra.

b. **Project Element 2 – No 87 Squadron**. Provision of a new permanent facility for No 87 Squadron.

c. **Project Element 3 – No 92 Wing**. Provision of new and upgraded facilities for No 92 Wing.

d. **Project Element 4 – No 24 Squadron**. Provision of new and upgraded facilities for No 24 Squadron.

e. **Project Element 5 – New Air Traffic Control Tower**. Provision of a new Air Traffic Control tower.

f. **Project Element 6 – Ordnance Loading Aprons**. Provision of two new Ordnance Loading Aprons.

g. **Project Element 7 - Passive Defence**. Provision of fixed and electronic security measures, as well as improvements to base entry points.

h. **Project Element 8 - Infrastructure Services**. Upgrade to existing engineering services including water, sewerage, stormwater drainage, communication systems, existing roads infrastructure, and high voltage electrical services.

i. **Project Element 9 – Demolition**. The demolition of redundant facilities.

ECONOMIC IMPACTS

11. The project will generate short-term employment opportunities predominantly in the building, construction and unskilled labour markets during the construction period along with activity off site for manufacturing and distribution of materials. It is anticipated that regional building contractors and local tradespersons would be employed during the majority of the construction works.

ENVIRONMENTAL AND HERITAGE CONSIDERATIONS

12. The Edinburgh Defence Precinct has been subject to comprehensive environmental investigations including an Environment and Heritage Management Plan 2007 and a Heritage Impact Assessment 2007. These documents have been used to inform the design of the RAAF Base Edinburgh Redevelopment Stage 2 project.

13. RAAF Base Edinburgh Redevelopment Stage 2 was assessed against Defence's environmental policies. The Directorate of Environmental Impact Management has reviewed all relevant environmental documentation associated with the proposal and has concluded that the environmental impacts of the project are unlikely to have a significant impact on the environment as defined under the *Environment Protection and Biodiversity Act 1999* and that approval from the Minister for the Environment, Heritage and Arts is not required.

14. A Construction Environmental Management Plan will be produced by the contractors, to ensure all mitigation measures and compliance requirements are implemented in accordance with Defence's environmental approval processes.

SOCIAL AND COMMUNITY IMPACTS

15. RAAF Base Edinburgh currently accommodates over 1,850 uniformed personnel and more than 1,300 Australian Public Service and contract personnel. The HNA initiative will increase the base population to approximately 3,000 uniformed personnel. The relocation of No 462 Squadron will add a further 100 additional personnel to the base population.

16. This project will employ building and construction workers from the local region and is likely to provide a positive economic impact to small and medium businesses in the local region. Significant interest in the project's two construction contracts is expected from South Australian building contractors.

RELATED PROJECTS

17. Four other projects including the Hardened and Networked Army Facilities Project, the Edinburgh component of the C-17 Heavy Lift Infrastructure Project, the Single Living Environment Accommodation Precinct Project Phase Two and a component of the Enhanced Land Force Stage One Facilities Project are being delivered or are proposed for delivery at RAAF Base Edinburgh during the construction period of the proposed redevelopment. To

coordinate the various projects at all levels, including design, construction, stakeholder and public interest, Defence has formed the Edinburgh Defence Precinct Coordination Group to provide the platform for overall project coordination. Details concerning each of the related projects are as follows:

a. **Hardened and Networked Army Facilities Project.** The Hardened and Networked Army Facilities Project, at a cost of $623.68M, will primarily deliver new Army facilities for the 7th Battalion, the Royal Australian Regiment, which will be fully integrated with the existing base. Construction on this project commenced in October 2008.

b. **Single Living Environment Accommodation Precinct Project Phase 2.** This project will develop new accommodation for 230 living-in personnel in the domestic area of the base.

c. **The C-17 Heavy Lift Infrastructure Project.** The works currently being undertaken at RAAF Base Edinburgh as part of this project include a new air movements terminal and associated apron and taxiway works. Construction at RAAF Base Edinburgh commenced in May 2008.

d. **Enhanced Land Force Stage One Facilities Project.** The provision of a new workshop facility is proposed for Joint Logistics Unit (South) at RAAF Base Edinburgh to support the 7th Battalion, the Royal Australian Regiment Battle Group, as part of the overall Enhanced Land Force Stage One Facilities Project. This project was referred to the Parliamentary Standing Committee on Public Works on 13 October 2008 and is the subject of a current enquiry.

CHILD CARE PROVISION

18. There is no requirement for additional child care facilities as part of this project.

CONSULTATION

19. During the development of the project, consultation has occurred with Defence stakeholders. Community consultation is to be conducted to inform the local community of the proposed works. No local community or other interest groups have been identified that would be affected by the project.

20. The following individuals and organisations have or will be consulted about the project:

a. Department of the Environment, Water, Heritage and the Arts;

b. ETSA Utilities;

c. South Australian Water Corporation;

d. Telstra;

e. Origin Energy;

f. City of Salisbury;

g. City of Playford;

h. Town of Gawler;

i. Land Management Corporation of South Australia;

j. South Australian Government Defence Unit;

k. South Australian Metropolitan Fire Service;

l. Federal Member for Wakefield;

m. Kaurna Aboriginal Group;

n. Tappa Iri Indigenous Business Centre; and

o. South Australian Government Aboriginal Affairs and Reconciliation Division.

REVENUE

21. No revenue will be derived from this proposal.

PART B – TECHNICAL INFORMATION

PROJECT LOCATION

22. RAAF Base Edinburgh is an operational base located approximately 30 km north of Adelaide. A site location plan is at Attachment 1. The base is home to two major RAAF Groups; Aerospace Operational Support Group and No 92 Wing of Surveillance and Response Group. RAAF Base Edinburgh is also the home base for the AP-3C Orion aircraft operated by No 10 and No 11 Squadrons of No 92 Wing. Other units at RAAF Base Edinburgh include No 1 Radar Surveillance Unit, No 24 (City of Adelaide) Squadron and No 1 Airfield Defence Squadron. Other RAAF units also have small permanent detachments at RAAF Base Edinburgh.

23. All of the proposed project elements are located in the Edinburgh Defence Precinct.

PROJECT SCOPE

24. The RAAF Base Edinburgh Redevelopment Stage 2 Project comprises nine elements. A site plan of the project elements is at Attachment 2. Each project element is summarised in the following sub-paragraphs and are detailed further in the proposed facilities layout plans at Attachments 3 to 29.

25. **Project Element 1 – No 462 Squadron Facility (Attachments 3-5)**. The proposed No 462 Squadron facility includes:

a. A permanent facility for 100 personnel.

b. The facility will provide secure working accommodation, including office space, meeting rooms, technical computer laboratories, workshops, a deployable equipment store, and amenities.

26. **Project Element 2 – No 87 Squadron Facility (Attachments 6-8)**. The proposed No 87 Squadron facility includes:

a. A permanent facility for 150 personnel.

b. Secure working accommodation including office space, meeting rooms, technical computer laboratories, a deployable equipment store and amenities.

27. **Project Element 3 – No 92 Wing Aircrew Facilities (Attachments 9-11)**. The proposed No 92 Wing Aircrew Facilities include:

a. Refurbishment of buildings No 425 and No 426 to provide each of No 10 and No 11 Squadrons with three air crew rooms, a reconfigured briefing room and a common room.

b. Provision of a new modular demountable facility to provide each squadron with four air crew rooms.

28. **Project Element 4 – No 24 Squadron Facilities (Attachments 12-15).** The proposed No 24 Squadron facilities include:

a. Refurbishment of building No 270 as a new permanent headquarters facility, providing individual offices, open office workstation space, meeting rooms and a reception area.

b. A new permanent training facility providing individual offices, open office workstation space, training rooms, resource areas, a crew room and amenities.

29. **Project Element 5 - Air Traffic Control Tower Facility (Attachments 16-19).** The proposed new Air Traffic Control tower facility includes:

a. A new Air Traffic Control tower located near the existing tower, which will provide enhanced lines of sight to the operational areas of the airfield, comprising a new cabin, crew room, office space, radio equipment room, meeting room, amenities and plant room.

b. Decommissioning of the existing tower and demolition of the tower structure.

30. **Project Element 6 – Ordnance Loading Aprons (Attachments 20-21).** The proposed Ordnance Loading Aprons element of works includes:

a. Two new revetted Ordnance Loading Aprons each with access taxiways suitable to accommodate aircraft up the Orion AP-3C or similar aircraft.

b. Provision of a service hut to provide working accommodation for technicians and an access road suitable for heavy vehicles.

31. **Project Element 7 - Passive Defence Upgrade (Attachments 22-23).** The proposed passive defence upgrade includes:

a. **High Security Zone.** A 2400 mm high welded rigid mesh fence topped with razor wire loops to an overall height of 3000 mm with Closed Circuit Television (CCTV) surveillance cameras, electronic detection and smart card access control.

b. **Medium Security Zone.** A 2400 mm woven chain link light duty fence topped with 3 strands of barbed wire to an overall height of 3000 mm, CCTV gate surveillance and smart card access control.

c. **Low Security Zone.** A 2400 mm woven chain link light duty fence topped with 3 strands of barbed wire to an overall height of 3000 mm, CCTV gate surveillance and smart card access control.

d. **Base Access.** The provision of new access arrangements at the main base entrance (east gate) and the existing north gate are proposed. The scope of work at each site includes the installation of boom gates and other security measures including CCTV surveillance, vehicle inspection and turn around arrangements and a guard booth.

32. **Project Element 8 – Engineering Services Infrastructure Upgrade**. The proposed engineering services infrastructure upgrade includes:

a. **Roads (Attachment 24)**. Reconstruction of the primary arterial roads including Fisher Boulevard (formerly Smithfield Road), widening of McNamara Road (west), reconstruction of the Fisher/McNamara intersection and conversion of Trials Avenue from one-way to two-way.

b. **Water (Attachment 25)**. Replacement of existing water system elements to provide new separate fire and potable water mains, and installation of a new separate non-potable system for connection to toilets, urinals and irrigation systems.

c. **Sewerage (Attachment 26)**. Provision of a new trunk sewer to service the central and north domestic areas of the base.

d. **Stormwater (Attachment 27)**. Restoration of existing open unlined drains and replacement of road culverts and underground piping to improve overall drainage capacity.

e. **Communications (Attachment 28)**. Provision of optic fibre cable conduit pathways to the central domestic and northern domestic areas of the base to improve base communications infrastructure.

f. **Electrical Services (Attachment 29)**. Provision of new high voltage electrical transformers to support new facilities for No 24 Squadron and No 462 Squadron.

33. **Project Element 9 – Demolition.** Redundant facilities will be demolished.

SITE SELECTION AND DESCRIPTION

34. The proposed sites for each of the elements of works are shown on the site plan at Attachment 2. All sites are contained within the Edinburgh Defence Precinct, being Commonwealth owned and Defence controlled land. The selection of the sites for each project element has been undertaken in accordance with the Defence Estate Planning Policy requirements. The site selection board process addressed Defence policy including environmental, heritage and operational considerations.

ZONING, APPROVALS AND LAND ACQUISITION

35. The facilities proposed in the project will be constructed on Commonwealth owned and Defence controlled land, therefore, no civilian authority, zoning or development approvals are required. This proposal does not require the acquisition of additional land or involve any land disposal.

36. There will be no change to the existing land use conditions for any of the project sites and all proposed uses for the various sites are consistent with the current zone and precinct plan.

APPLICABLE CODES AND STANDARDS

37. Where appropriate, the design and construction of the proposed works and services will comply with the relevant sections of the following legislations, regulations, standards and policies:

a. Building Code of Australia;

b. Australian Standards;

c. Commonwealth and State Legislation;

d. *Defence Manual of Fire Protection Engineering*;

e. Defence Facilities Communications Cabling Standard;

f. Defence security publications;

g. *Defence Operations Manual* – "Safety Principles for the Handling of Explosives Ordnance"; and

h. Occupational health, safety and welfare and the *Defence Occupational Health and Safety Manual*.

38. A qualified and practicing building certifier will certify that the design and the finished construction of the facilities meet the requirements of the BCA, Australian Standards, the Defence MFPE and any additional state, local government and Defence policies.

39. The successful construction contractors will be required to produce a Construction Management Plan which will clearly show how the legislation, building codes, Australian Standards and Defence requirements will be met.

PLANNING AND DESIGN CONCEPTS

40. The project will provide safe, secure and efficient working accommodation and training facilities specifically designed for the required functions. During the preliminary design stage consideration was given to the selection of materials, equipment, finishes, construction techniques and buildability. All were considered for their ability to deliver economies and environmentally sustainable efficiencies on a whole-of-life basis. Consideration was also given to achieving the necessary functional requirements, work flow patterns and work environment required to fulfil the project design criteria. The selection of engineering services and associated equipment, energy systems and capital costs were assessed against the operational and maintenance costs.

41. The design team consultants undertook precinct and site planning studies on each of the project elements. The studies considered various planning issues including:

a. the capacity of each site to accommodate the proposed facilities as proposed; and

b. the development of suitable functional and interconnected relationships between each site, the site precinct and the base.

ECOLOGICALLY SUSTAINABLE DEVELOPMENT, WATER AND ENERGY CONSERVATION

42. The Commonwealth is committed to ESD and the reduction of greenhouse gas emissions. Defence reports annually to Parliament on its energy management performance in accordance with the Energy Efficiency in Government Operations Policy and on its progress in meeting the energy efficiency targets established by the Government as part of its commitment to improve ESD. Defence also implements policies and strategies in energy, water and waste management to improve natural resource efficiency and to support its commitment to reducing energy consumption, potable water consumption and waste diversion to landfill. This project has addressed these requirements by adopting cost effective ESD as a key objective in the design development and delivery of new facilities and refurbishments.

43. The ESD targets and measures for the project have been balanced with other requirements for Defence buildings (e.g. security, heritage considerations, and occupation health and safety) to ensure that Defence's operational capability is not compromised. All buildings included in this project will be designed, constructed, operated and maintained to ensure that they use energy efficiently. Where applicable, the use of the Green Star and National Australian Built Environment Rating System energy design rating tool has been adopted. In addition, as applicable to the classification of each building, the following policies will be complied with:

a. The Energy Efficiency in Government Operations Policy.

b. Part I2 and Section J of Volume One of the Building Code of Australia.

c. Part 3.12 of Volume Two of the Building Code of Australia.

d. Defence Green Building Requirements Part 1.

44. An environmental and heritage impact assessment has been undertaken and included:

a. **Ecological Sustainable Development Principles - Electricity, Gas and Water**. The new buildings will be energy and water efficient in accordance with Defence Green Star commitments and will minimise any increase over baseline levels. Refurbished buildings cannot meet the same levels of efficiency as those of a new construction but will incorporate as far as possible Defence objectives for energy minimisation and water reuse. Efficiencies will be achieved by complying with the Defence Green Building Requirements and incorporating ESD principles, such as building orientation, stormwater harvesting and energy efficient appliances into the design.

b. **Stormwater Management**. There is potential for construction activities, such as, excavation to expose soil which can erode and infiltrate stormwater. The construction of roofed facilities and hardstand areas has the potential to increase ongoing stormwater flows, however, mitigation measures will be undertaken, such as, the capture, storage, and re-use of rainwater from roofed areas, design of stormwater catchment systems in accordance with applicable standards and the establishment of vegetation.

c. **Flora and Fauna**. The project has been developed in accordance with Defence environmental policies. The majority of the redevelopment sites are brownfield sites with no significant flora, fauna, vegetation communities or sites of aboriginal heritage. Nevertheless, the planting of landscape features and complementary re-vegetation will be undertaken as a component of the development of each site. The proposed development is not considered to have a significant impact on the environment, once management measures are implemented prior to construction.

45. A Construction Environmental Management Plan is to be developed by the construction contractor and endorsed prior to construction commencing. The plan will address any construction conditions detailed in the Environmental Assessment Report. A Defence Environmental Clearance Certificate will be required for the implementation of each element of the project.

PROVISION FOR PEOPLE WITH DISABILITIES

46. Access and facilities for all new buildings will be provided in accordance with the BCA, Australian Standards and the Defence Policy – Requirements for the Provision of Disabled Access and other Facilities for Disabled Persons in Defence Facilities.

OCCUPATIONAL HEALTH AND SAFETY

47. The proposed facilities will comply with the requirements of the Occupational Health and Safety Act, the *Department of Defence Health and Safety Manual* and relevant South Australian Government Health and Safety legislation. The construction contractor will be required to develop and implement an approved Health and Safety Plan incorporating compliance with Defence's Health and Safety policies.

48. All sites will be secured to prevent unauthorised public access during the construction period including demolition works. No special or unusual public safety risks have been identified.

STRUCTURAL DESIGN

49. The majority of the new facilities are single storey buildings. To meet structural, security and environmental requirements the structural design will generally comprise:

a. stiffened concrete raft footing system with slab on ground;

b. masonry walls with supplementary steel columns supporting steel roof beams and roof plant structures; and

c. for the Air Traffic Control tower, the building structure will be cast in-situ, with reinforced concrete, supplementary steel supports and lightweight cladding.

MATERIALS AND FINISHES

50. The primary materials and finishes have been selected from those readily available that demonstrate functionality, economically sustainability and low maintenance and will generally comprise:

a. masonry – red face brick;

b. wall cladding – aluminium pre-finished sheet;

c. windows – double glazed with clear anodised aluminium window frames or equal finish for steel frames; and

d. roof, guttering and downpipes – zincalume finish metal sheet.

MECHANICAL SERVICES

51. New facilities will be air-conditioned where operational activities require a thermally controlled environment. This includes most new buildings and most areas within those buildings.

52. The selection of the air conditioning system and associated equipment will consider the life cycle economic balance between capital cost, operational cost and maintenance costs. To limit power demands ancillary building areas, such as toilets and store rooms, will utilise exhaust fans and natural ventilation.

53. New facilities incorporate building management systems, metering and other provisions to measure and monitor energy use and to allow regular energy audits where practicable.

HYDRAULIC SERVICES

54. All new facilities will be connected to the upgraded water and sewer infrastructure.

55. The hydraulic infrastructure will also include a non-potable second class water supply using water from the Salisbury Aquifer.

56. Domestic water supply and sanitary drainage within the new and refurbished buildings will be via new connections to the new base services infrastructure.

57. New stormwater drainage pipelines will be provided where necessary to collect stormwater runoff and direct it into the existing infrastructure system. Rainwater from building roofs will be collected and fed into rainwater storage tanks to be used for toilet flushing within each building where practicable to do so.

58. Domestic water heating will be provided to each facility via high efficiency electric water heaters in accordance with the latest government directives and the BCA. The design will be considered for each building dependant on demand requirements and energy efficiencies.

ELECTRICAL AND COMMUNICATIONS INFRASTRUCTURE

59. The proposed development will use the existing high voltage electrical supply and reticulation system, with the exception of the No 24 Squadron facility and the No 462 Squadron facility, which will both be provided with a new, dedicated 750 kVA high voltage electrical transformer connected to the existing reticulation system.

60. A new optic fibre service will be provided to the northern domestic area of the base in accordance with the Communications Masterplan.

61. The No 462 Squadron project element includes upgrading the communications infrastructure services at DSTO, as will be necessary to connect to the existing wide area data and voice communications network. The scope will include the provision of pit and pipe cable pathways and optic fibre cabling from existing communication network "nodes" to provide an infrastructure cabling system to service the building.

FIRE PROTECTION

62. All construction and fire protection requirements will, as a minimum, be in accordance with the provisions of the BCA, the MFPE and all other applicable Codes and Standards. The MFPE details Defence fire protection policy for asset protection and building function protection. The levels of fire protection specified are above BCA requirements and have been determined by a risk assessment and risk management approach to fire protection.

63. Defence will require certification from a suitably qualified and accredited building surveyor that the design and construction of the buildings meet the requirements of the BCA, the MFPE, relevant codes and standards and any additional state, local government and Defence requirements.

64. The South Australian Metropolitan Fire Service will be invited to comment on the project, visit the site and offer comment throughout the construction phase to ensure that the Fire Service's operational requirements are met.

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

CIVIL WORKS AND INFRASTRUCTURE

66. This project includes comprehensive upgrades of selected roads on the base including, reconstruction of Fisher Boulevard (formerly Smithfield Road), widening of McNamara Road, upgrade of selected road intersections, reconstruction of Trials Avenue to a two-way road. Existing stormwater systems will also be upgraded to meet the one in one hundred years flood reoccurrence.

STORMWATER

67. Restoration of selected open unlined stormwater drains to the northern portions of the base where these have suffered from dilapidation. Also, where these drains pass below roadways, selected drain culvert structures will be replaced where these are in poor condition.

LANDSCAPING

68. Supplementary landscaping will be provided with all new buildings.

69. Landscaping works will focus on the restoration of areas disturbed during construction. The landscape design is functional with low maintenance being a design priority. A water sensitive design approach has been adopted with plants selected that are indigenous to the area.

SECURITY

70. Advice from designated security authorities has been incorporated into the design solutions for the proposed facilities as appropriate. The security threat assessment will be reviewed during the detailed design phase and the new facilities will be secured as appropriate to the classification level required for the activities to be conducted. Appropriate security protection will be provided in accordance with the *Defence Security Manual*, *Defence Construction Security Reference Manual* and any other specific project requirements.

71. The Passive Defence element of this project will provide an increase in the level of physical security and electronic surveillance to the base. This work includes the provision of new vehicle entry points to the north and east and the installation of new security fencing and monitoring systems.

ACOUSTICS

72. The proposed new buildings for the RAAF Base Edinburgh Redevelopment Stage 2 Project will be generally located outside of significant Australian Noise Exposure Forecast noise contours associated with noise generated by aircraft operating from the base. The only facilities to be located within higher noise areas due to operational requirements will be the Air Traffic Control tower and the Ordnance Loading Aprons. Noise attenuation measures have been incorporated in the design of the new Air Traffic Control Tower.

PROJECT COSTS

73. The estimated out-turn cost of the project is $99.56M (excluding GST).

74. This cost estimate includes the construction costs, management and design fees, furniture, fittings and fixed equipment, information and communication technology, contingencies and escalation provisions.

75. A modest increase in the net operating costs of the facilities is expected due to the construction of the new facilities and the associated increases in facilities maintenance, cleaning and utilities expenses.

PROJECT DELIVERY SYSTEM

76. A Head Contract delivery system is proposed for the project**.** The project will be packaged to generate interest from building companies which specialise in either the civil or building sectors of the construction market. The contract proposed package values should generate interest from a wide range of medium sized contractors.

PROJECT SCHEDULE

77. Subject to Parliamentary clearance, construction of elements of the project is expected to commence in late 2009 and be completed by mid 2012.

ATTACHMENTS

Attachment 1: Edinburgh Defence Precinct – Site Location Plan

Attachment 2: Edinburgh Defence Precinct – Project Elements Site Plan

Attachment 3: Project Element 1 – No 462 Squadron Facility Site Plan

Attachment 4: Project Element 1 – No 462 Squadron Facility Floor Plan

Attachment 5: Project Element 1 – No 462 Squadron Facility Elevations

Attachment 6: Project Element 2 – No 87 Squadron Facility Site Plan

Attachment 7: Project Element 2 – No 87 Squadron Facility Floor Plan

Attachment 8: Project Element 2 – No 87 Squadron Facility Elevations

Attachment 9: Project Element 3 – No 92 Wing Site Plan

Attachment 10: Project Element 3 – No 92 Wing Buildings 425 & 426 Refurbishment Plans

Attachment 11: Project Element 3 – No 92 Wing New Air Crew Floor Plan and Elevations

Attachment 12: Project Element 4 – No 24 Squadron Site Plan

Attachment 13: Project Element 4 – No 24 Squadron B270 Refurbishment Floor Plan

Attachment 14: Project Element 4 – No 24 Squadron New Training Facility Floor Plan

Attachment 15: Project Element 4 – No 24 Squadron New Training Facility Elevations

Attachment 16: Project Element 5 – New Air Traffic Control Tower Site Plan

Attachment 17: Project Element 5 – New Air Traffic Control Tower Sections

Attachment 18: Project Element 5 – New Air Traffic Control Tower Plans

Attachment 19: Project Element 5 – New Air Traffic Control Tower Elevations

Attachment 20: Project Element 6 – Ordnance Loading Aprons Site Plan

Attachment 21: Project Element 6 – Ordnance Loading Aprons Layout Plan

Attachment 22: Project Element 7 – Passive Defence Main Gate Layout Plan

Attachment 23: Project Element 7 – Passive Defence North Gate Layout Plan

Attachment 24: Project Element 8 – Infrastructure Services Site Plan Road Reconstruction

Attachment 25: Project Element 8 – Infrastructure Services Site Plan Water Supply Layout

Attachment 26: Project Element 8 – Infrastructure Services Site Plan Sewer Layout

Attachment 27: Project Element 8 – Infrastructure Services Site Plan Stormwater Layout

Attachment 28: Project Element 8 – Infrastructure Services Site Plan Communications Layout

Attachment 29: Project Element 8 – Infrastructure Services Site Plan Electrical Services Layout

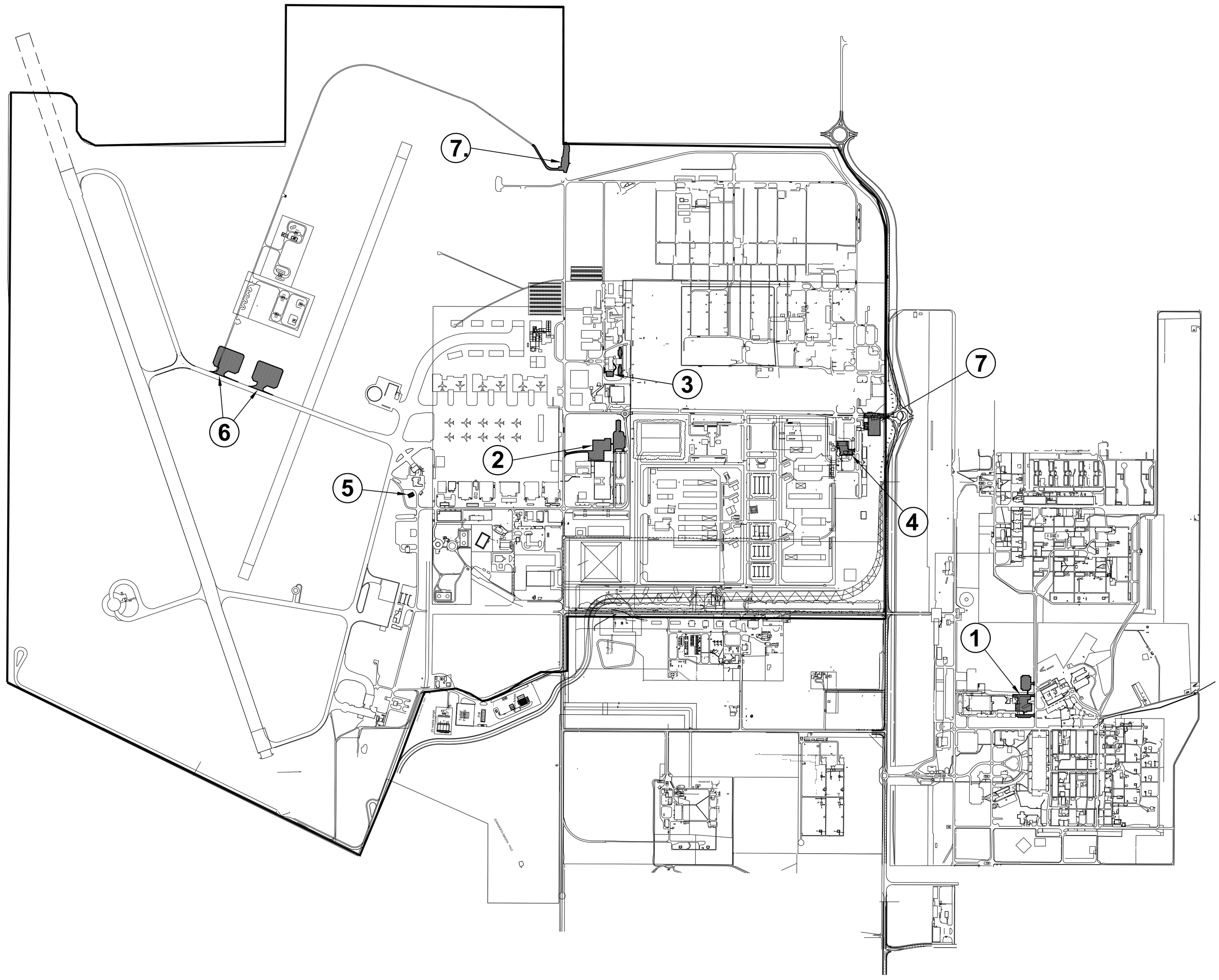
Australian Government
Department of Defence
Defence Support Group

THINC PROJECTS

KBR
Kellogg Brown & Root Pty Ltd
ABN 91 007 660 317

RAAF BASE EDINBURGH STAGE 2 REDEVELOPMENT
SITE LOCATION PLAN

200 0 200 400 600 800
SCALE 1: 10000 SCALE IN m



SCOPE ELEMENT

1. NEW 462 SQN FACILTY
2. NEW 87 SQN FACILTY
3. NEW AND REFURBSIHED 92 WING FACILTY
4. NEW AND REFURBISHED 24 SQN FACILTY
5. NEW AIR TRAFFIC CONTROL TOWER
6. NEW ORDNANCE LOADING AREA
7. NEW PASSIVE DEFENCE ENTRY GATES
8. NEW INFRASTRUCTURE SERVICES (NOT SHOWN)
9. DEMOLITION (NOT SHOWN)

200 0 200 400 600 800

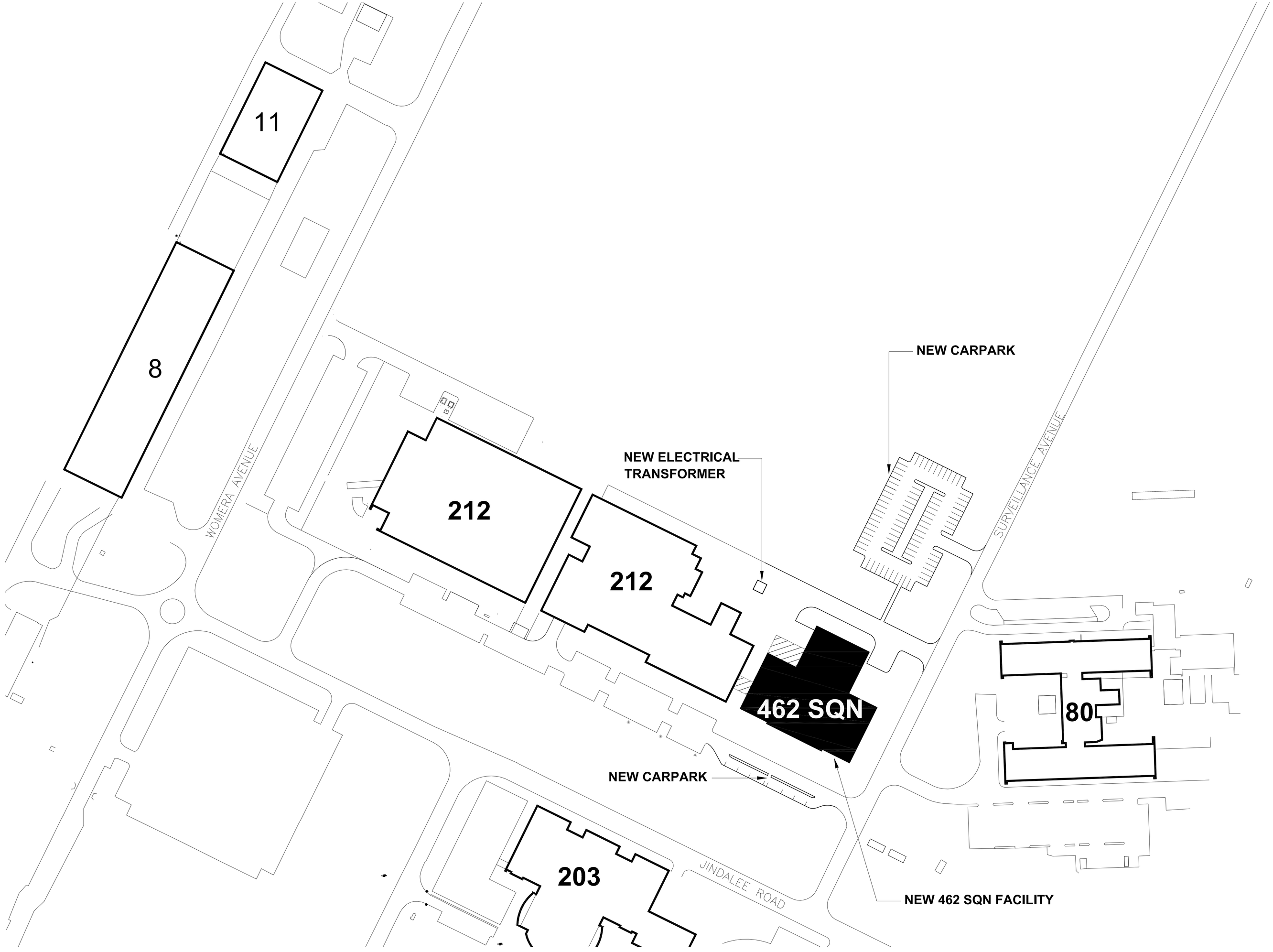
SCALE 1: 10000 SCALE IN m

Australian Government
Department of Defence
Defence Support Group

THINC PROJECTS

KBR
Kellogg Brown & Root Pty Ltd
ABN 91 007 660 317

RAAF BASE EDINBURGH STAGE 2 REDEVELOPMENT
PROJECT ELEMENTS SITE PLAN



Australian Government
Department of Defence
Defence Support Group

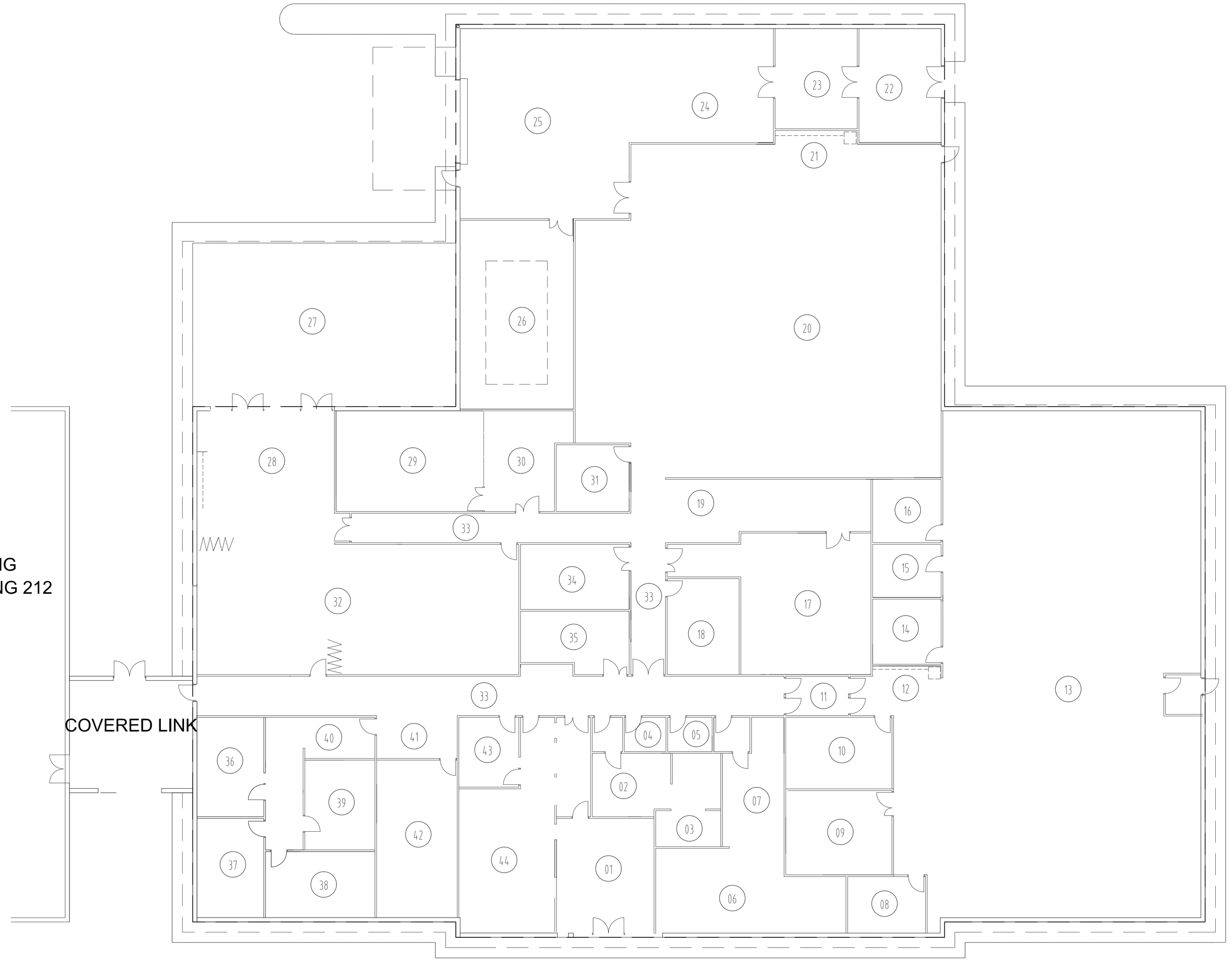
Hames Sharley — Architecture Interiors Urban Design Planning Landscape

THINC PROJECTS

KBR
Kellogg Brown & Root Pty Ltd
ABN 91 007 660 317

RAAF BASE EDINBURGH STAGE 2 REDEVELOPMENT
PROJECT ELEMENT 1
NEW 462 SQUADRON FACILITY SITE PLAN

0 10 50 100m



LEGEND:

1. FOYER
2. FEMALE WC
3. FEMALE CHANGE
4. CLEANER ROOM
5. ACCESS WC
6. MALE CHANGE
7. MALE WC
8. OFFICE
9. REGISTRY ROOM
10. MEETING ROOM
11. AIRLOCK
12. BREW AREA
13. OPEN PLAN OFFICE
14. COMMS ROOM
15. RESOURCE ROOM
16. OFFICE
17. LABORATORY
18. MEETING ROOM
19. RESOURCE ROOM
20. OPEN PLAN OFFICE
21. BREW AREA
22. WORKSHOP
23. WORKSHOP
24. WORK AREA
25. STORE ROOM
26. WORKSHOP
27. OUTDOOR RECREATION AREA
28. CREW ROOM
29. LABORATORY
30. OFFICE
31. OFFICE
32. MAIN BRIEFING ROOM
33. CORRIDOR
34. COMMS ROOM
35. COMMS ROOM
36. EXEC OFFICE
37. EXEC OFFICE
38. EXEC OFFICE
39. EXEC OFFICE
40. RESOURCE ROOM
41. WAITING AREA
42. CONFERENCE ROOM
43. OFFICE
44. ORDERLY ROOM

Australian Government
Department of Defence
Defence Support Group

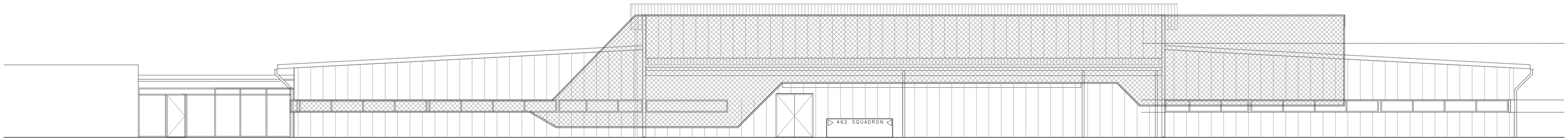
Hames Sharley — ARCHITECTURE INTERIORS URBAN DESIGN PLANNING LANDSCAPE

THINC PROJECTS

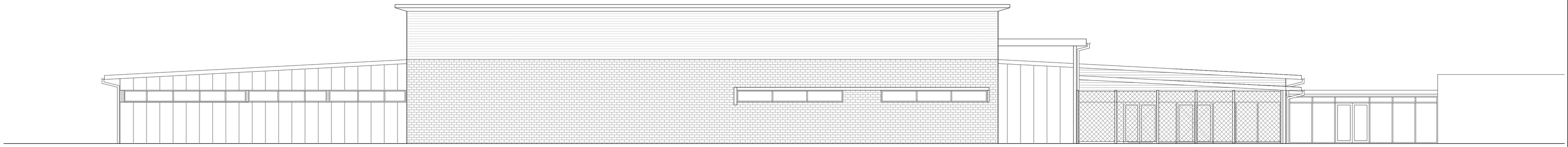
KBR
Kellogg Brown & Root Pty Ltd
ABN 91 007 660 317

RAAF BASE EDINBURGH STAGE 2 REDEVELOPMENT
PROJECT ELEMENT 1
NEW 462 SQUADRON FACILITY FLOOR PLAN

0 1 5 10m



SOUTH ELEVATION



NORTH ELEVATION

Australian Government
Department of Defence
Defence Support Group

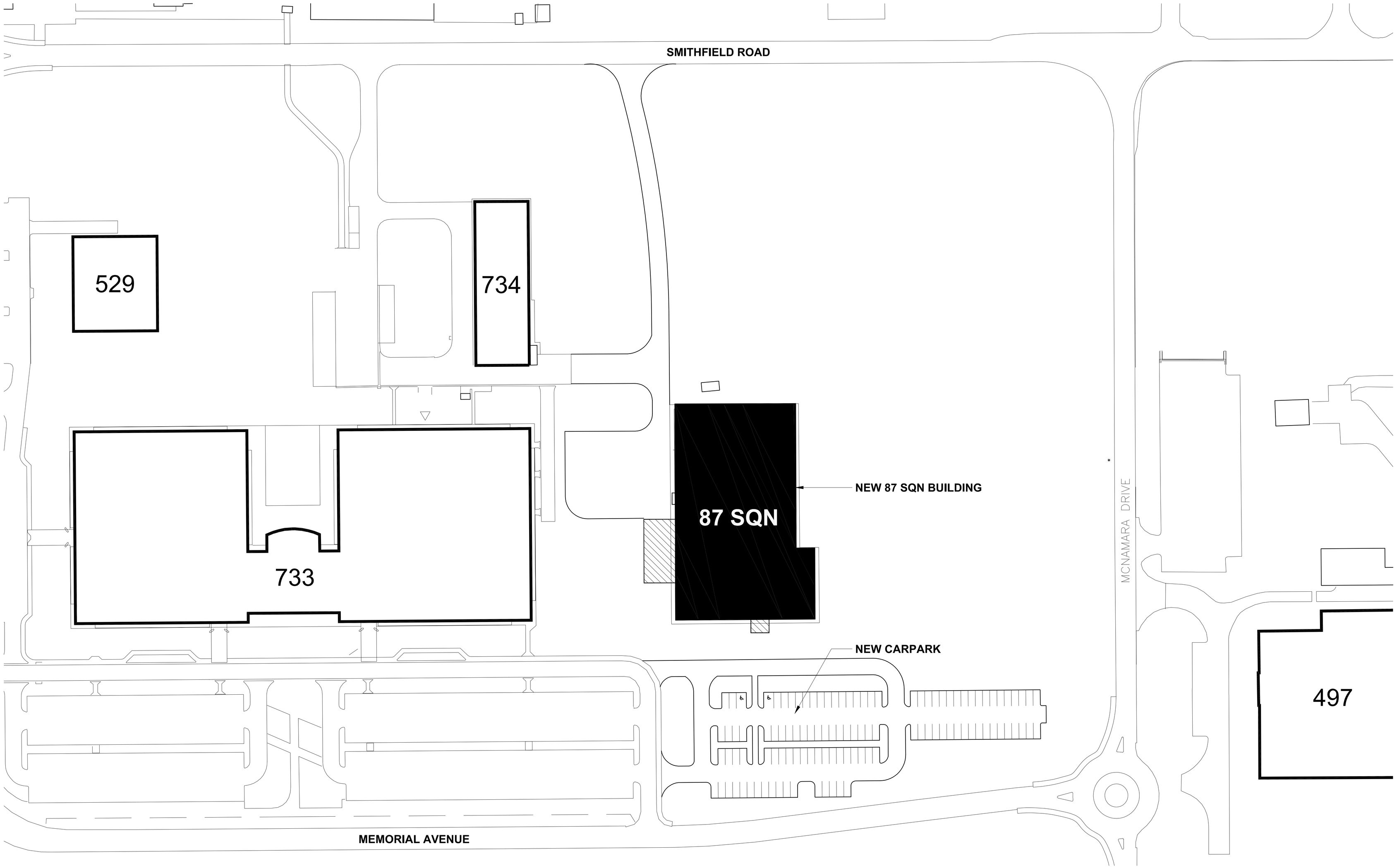
Hames Sharley
ARCHITECTURE
INTERIORS
URBAN DESIGN
PLANNING
LANDSCAPE

THINC PROJECTS

KBR
Kellogg Brown & Root Pty Ltd
ABN 91 007 660 317

RAAF BASE EDINBURGH STAGE 2 REDEVELOPMENT
PROJECT ELEMENT 1
NEW 462 SQUADRON FACILITY ELEVATIONS

0 1 5 10m



Australian Government
Department of Defence
Defence Support Group

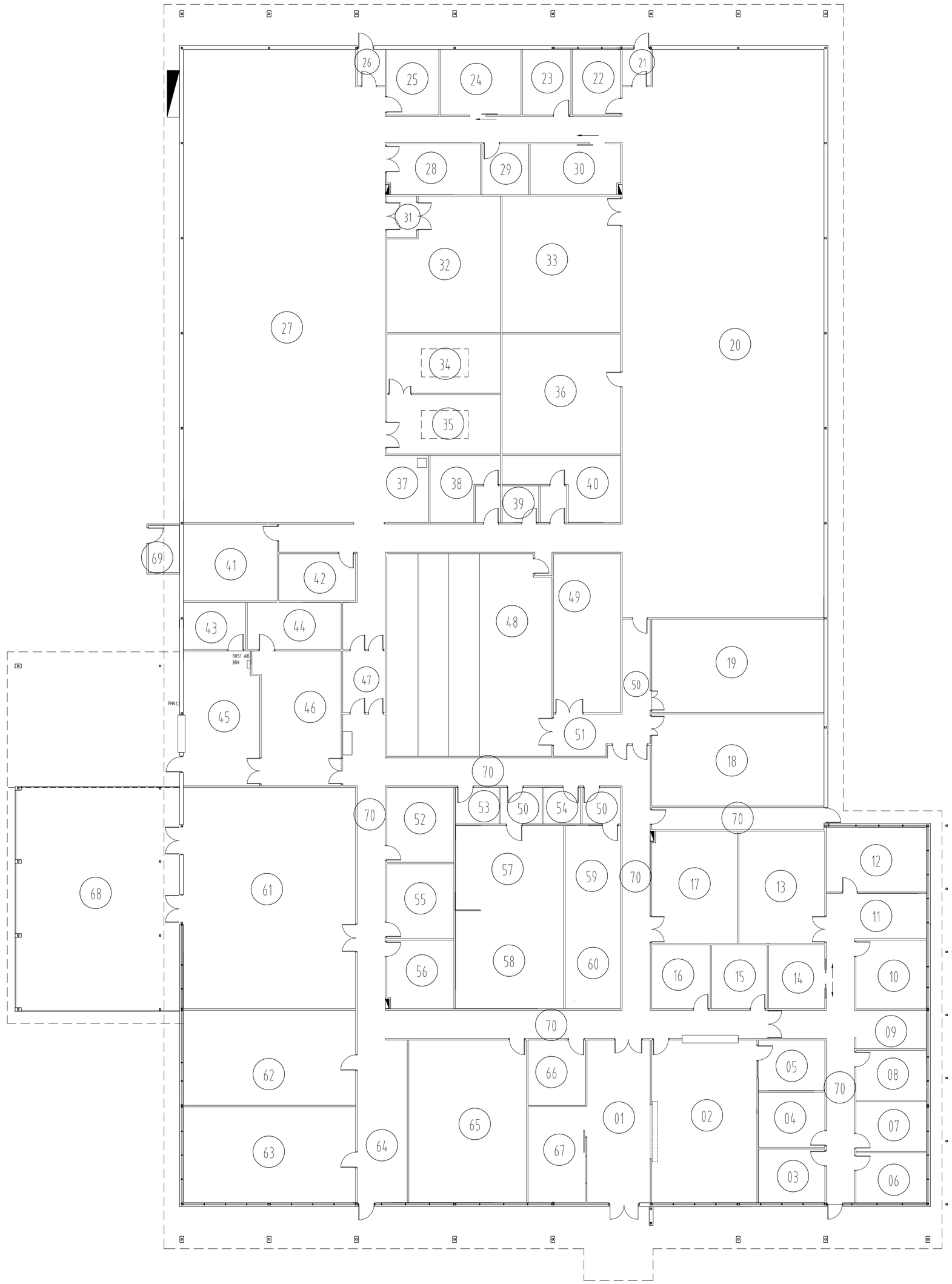
Hames Sharley — Architecture, Interiors, Urban Design, Planning, Landscape

THINC PROJECTS

KBR
Kellogg Brown & Root Pty Ltd
ABN 91 007 660 317

RAAF BASE EDINBURGH STAGE 2 REDEVELOPMENT
PROJECT ELEMENT 2
NEW 87 SQUADRON FACILITY SITE PLAN

0 10 50m



LEGEND:

1. FOYER
2. ORDERLY ROOM
3. OFFICE
4. OFFICE
5. EXEC OFFICE
6. OFFICE
7. EXEC OFFICE
8. EXEC OFFICE
9. BREW AREA
10. EXEC OFFICE
11. WAITING AREA
12. EXEC OFFICE
13. CONFERENCE ROOM
14. RESOURCE ROOM
15. OFFICE
16. INTERVIEW ROOM
17. BRIEFING ROOM
18. BRIEFING ROOM
19. COMPUTER BASED TRAINING
20. OPEN PLAN OFFICE
21. AIRLOCK
22. OFFICE
23. OFFICE
24. COMPACTUS ROOM
25. OFFICE
26. AIRLOCK
27. OPEN PLAN OFFICE
28. WORKSHOP
29. INTERVIEW ROOM
30. RESOURCE ROOM
31. AIRLOCK
32. LABORATORY
33. TRAINING ROOM
34. COMMUNICATIONS
35. SERVER ROOM
36. TRAINING ROOM
37. BREW AREA
38. FEMALE WC
39. ACCESS WC
40. MALE WC
41. OFFICE
42. OFFICE
43. OFFICE
44. OFFICE
45. STORE ROOM
46. STORE ROOM
47. AIRLOCK
48. BRIEFING ROOM
49. CONFERENCE
50. AIRLOCK
51. BREW AREA
52. SERVICES ROOM
53. CLEANER ROOM
54. ACCESS WC
55. COMMS ROOM
56. RESOURCE ROOM
57. MALE WC
58. MALE CHANGE
59. FEMALE WC
60. FEMALE CHANGE
61. CREW ROOM
62. OPEN PLAN OFFICE
63. OPEN PLAN OFFICE
64. RESOURCE AREA
65. TRAINING ROOM
66. OFFICE
67. MEETING ROOM
68. CREW AREA
69. FIRE HOSE REEL
70. PASSAGE

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Department of Defence
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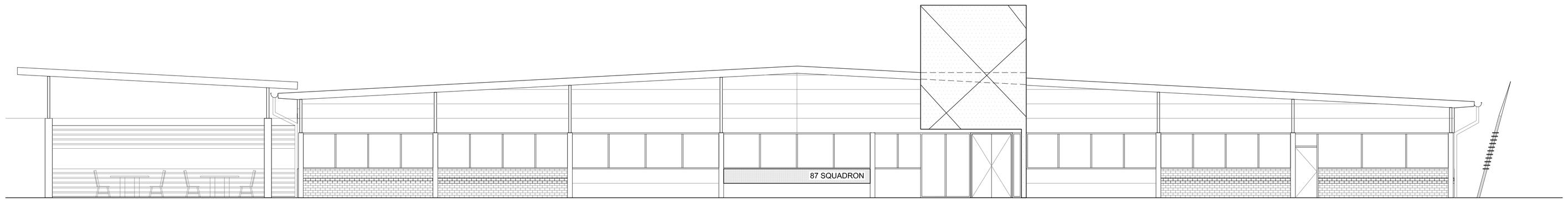
Hames Sharley — ARCHITECTURE INTERIORS URBAN DESIGN PLANNING LANDSCAPE

THINC PROJECTS

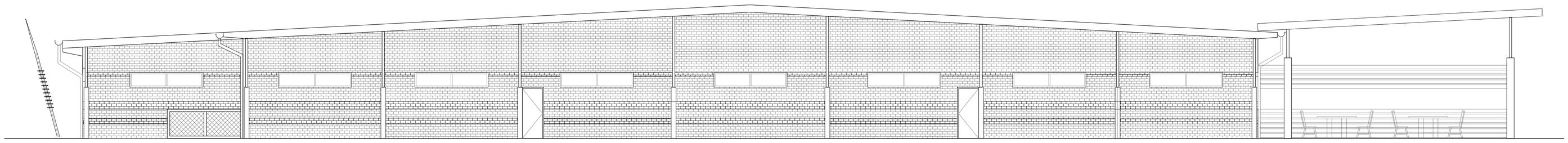
KBR
Kellogg Brown & Root Pty Ltd
ABN 91 007 660 317

RAAF BASE EDINBURGH STAGE 2 REDEVELOPMENT
PROJECT ELEMENT 2
NEW 87 SQUADRON FACILITY FLOOR PLAN

0 1 5 10m



SOUTH ELEVATION



NORTH ELEVATION

Australian Government
Department of Defence
Defence Support Group

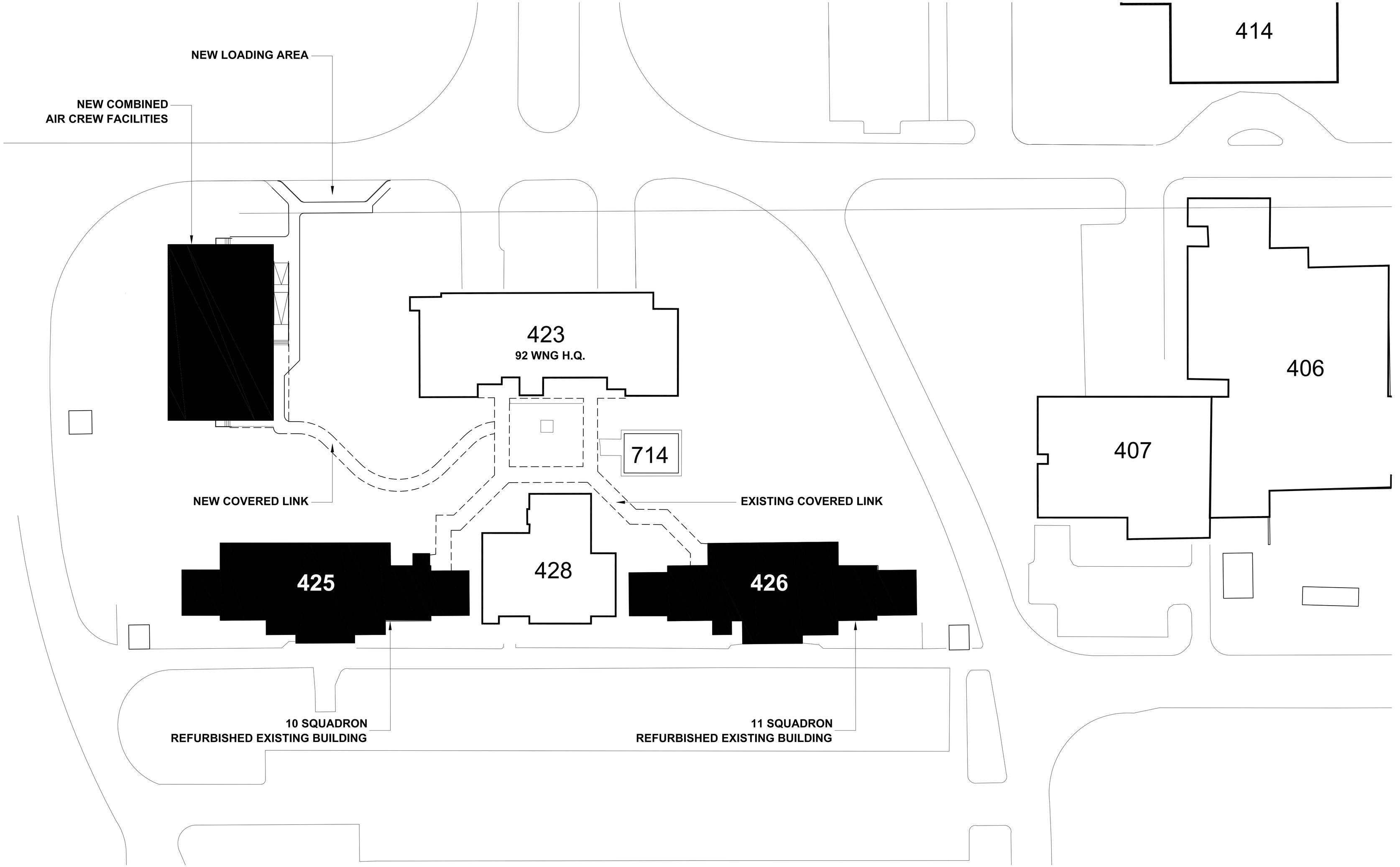
Hames Sharley — ARCHITECTURE INTERIORS URBAN DESIGN PLANNING LANDSCAPE

THINC PROJECTS

KBR
Kellogg Brown & Root Pty Ltd
ABN 91 007 660 317

RAAF BASE EDINBURGH STAGE 2 REDEVELOPMENT
PROJECT ELEMENT 2
NEW 87 SQUADRON FACILITY ELEVATIONS

0 1 5 10m



Australian Government
Department of Defence
Defence Support Group

Hames Sharley + ARCHITECTURE INTERIORS URBAN DESIGN PLANNING LANDSCAPE

THINC PROJECTS

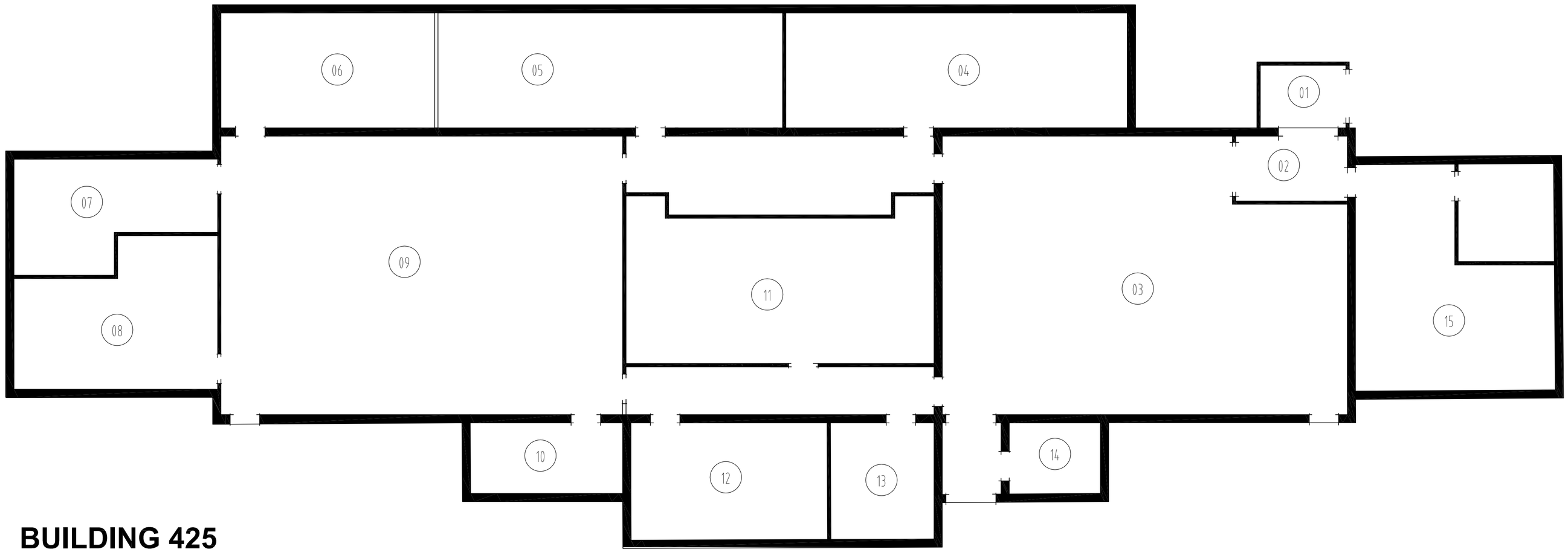
KBR
Kellogg Brown & Root Pty Ltd
ABN 91 007 660 317

RAAF BASE EDINBURGH STAGE 2 REDEVELOPMENT
PROJECT ELEMENT 3
92 WING SITE PLAN

0 5 10 20 30m

LEGEND - B425

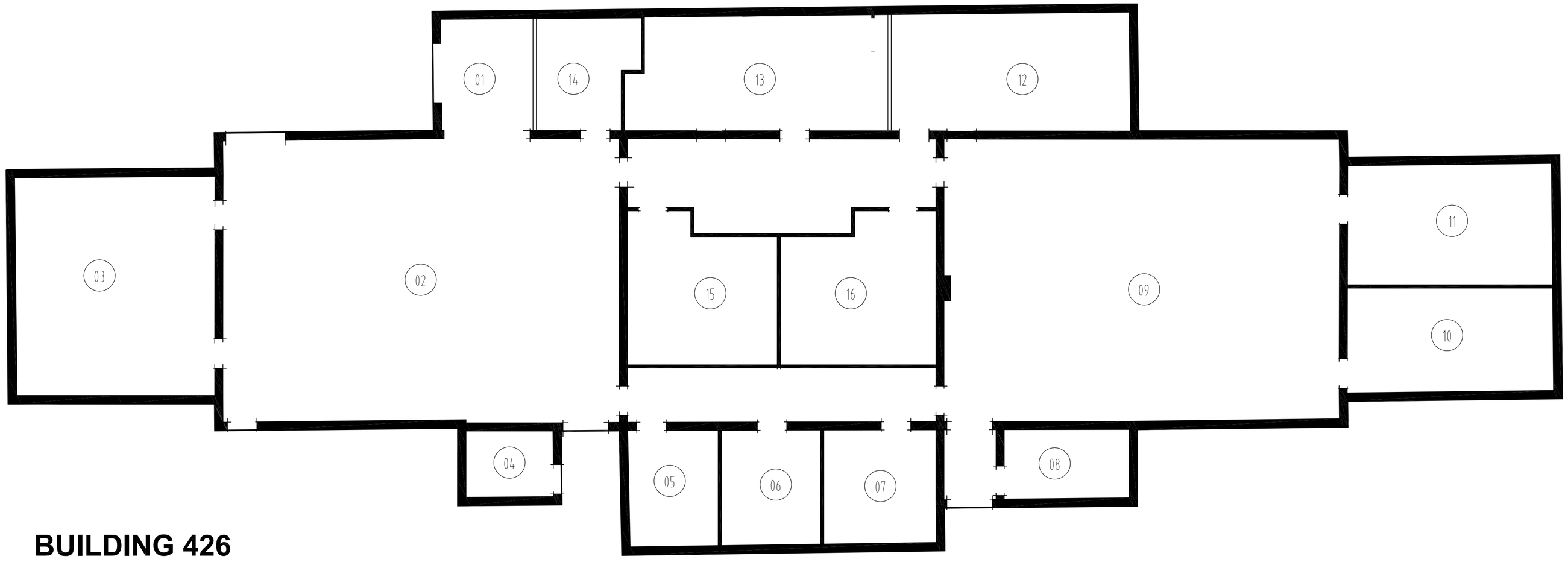
1. ENTRY
2. AIRLOCK
3. COMMON ROOM
4. AIR CREW ROOM
5. AIR CREW ROOM
6. RESOURCE ROOM
7. WORK ROOM
8. OFFICE
9. BRIEFING ROOM
10. SERVER ROOM
11. AIR CREW ROOM
12. OFFICE
13. OFFICE
14. STORE ROOM
15. COMMUNICATIONS ROOM



BUILDING 425

LEGEND - B426

1. ENTRY
2. AIR CREW ROOM
3. COMMON ROOM
4. STORE ROOM
5. OFFICE
6. OFFICE
7. OFFICE
8. STORE ROOM
9. BRIEFING ROOM
10. WORK ROOM
11. COMPUTER ROOM
12. AIR CREW ROOM
13. AIR CREW ROOM
14. SERVER ROOM
15. RESOURCE ROOM
16. RESOURCE ROOM



BUILDING 426

Australian Government
Department of Defence
Defence Support Group

Hames Sharley — Architecture Interiors Urban Design Planning Landscape

THINC PROJECTS

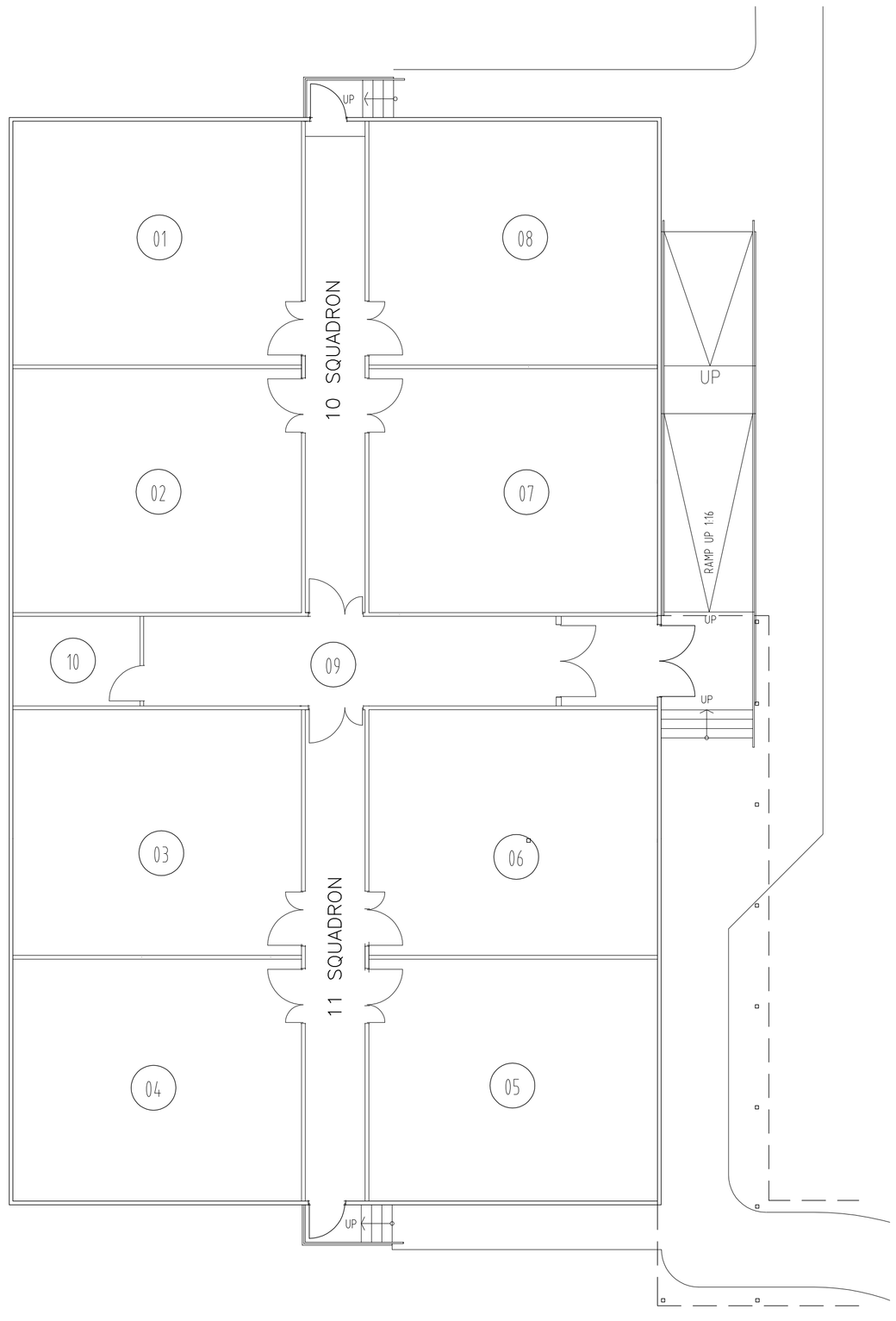
KBR
Kellogg Brown & Root Pty Ltd
ABN 91 007 660 317

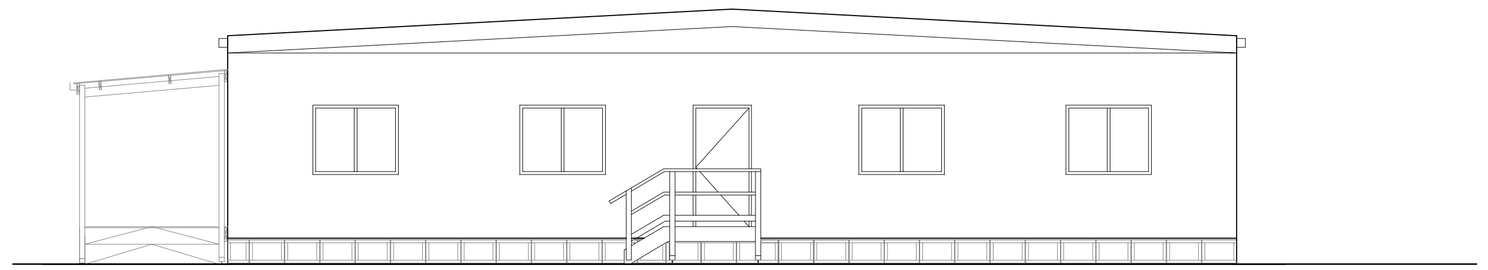
RAAF BASE EDINBURGH STAGE 2 REDEVELOPMENT
PROJECT ELEMENT 3
92 WING BUILDING 425 & 426 REFURBISHMENT FLOOR PLAN

0 1 5 10m

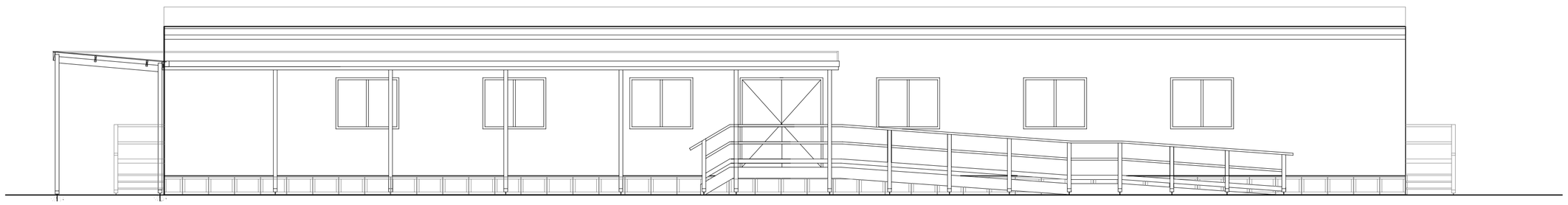
LEGEND

1. AIR CREW ROOM
2. AIR CREW ROOM
3. AIR CREW ROOM
4. AIR CREW ROOM
5. AIR CREW ROOM
6. AIR CREW ROOM
7. AIR CREW ROOM
8. AIR CREW ROOM
9. PASSAGE
10. COMMS ROOM

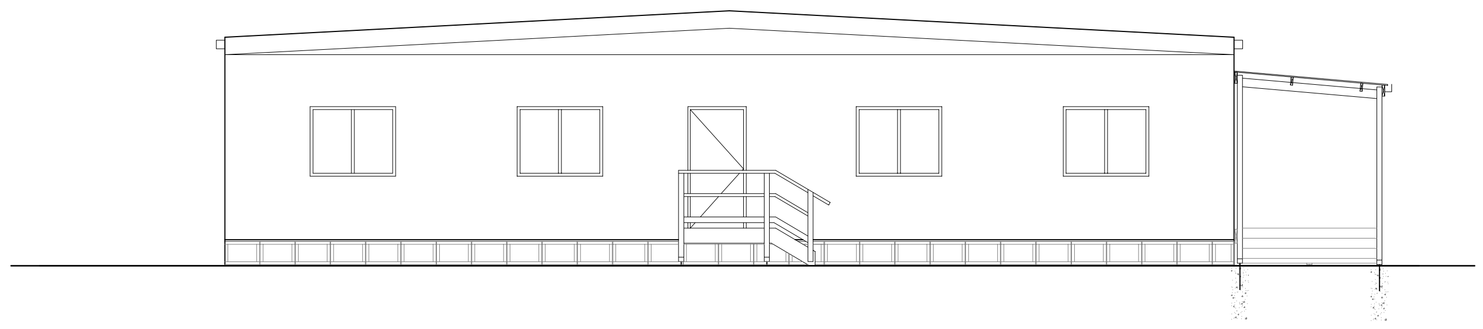




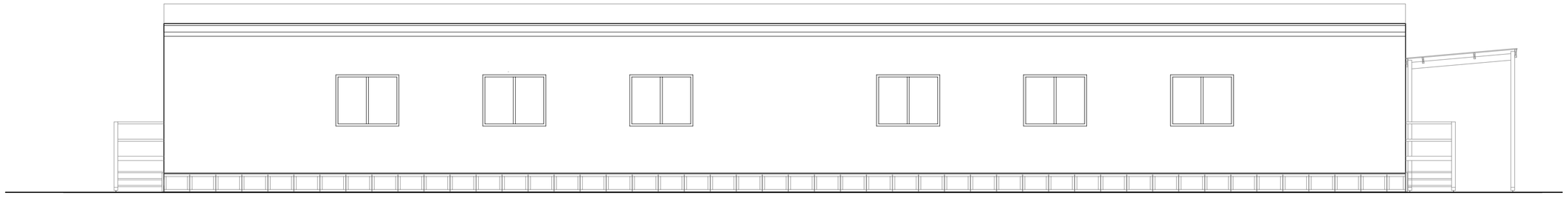
WEST ELEVATION



NORTH ELEVATION



EAST ELEVATION



SOUTH ELEVATION

Australian Government
Department of Defence
Defence Support Group

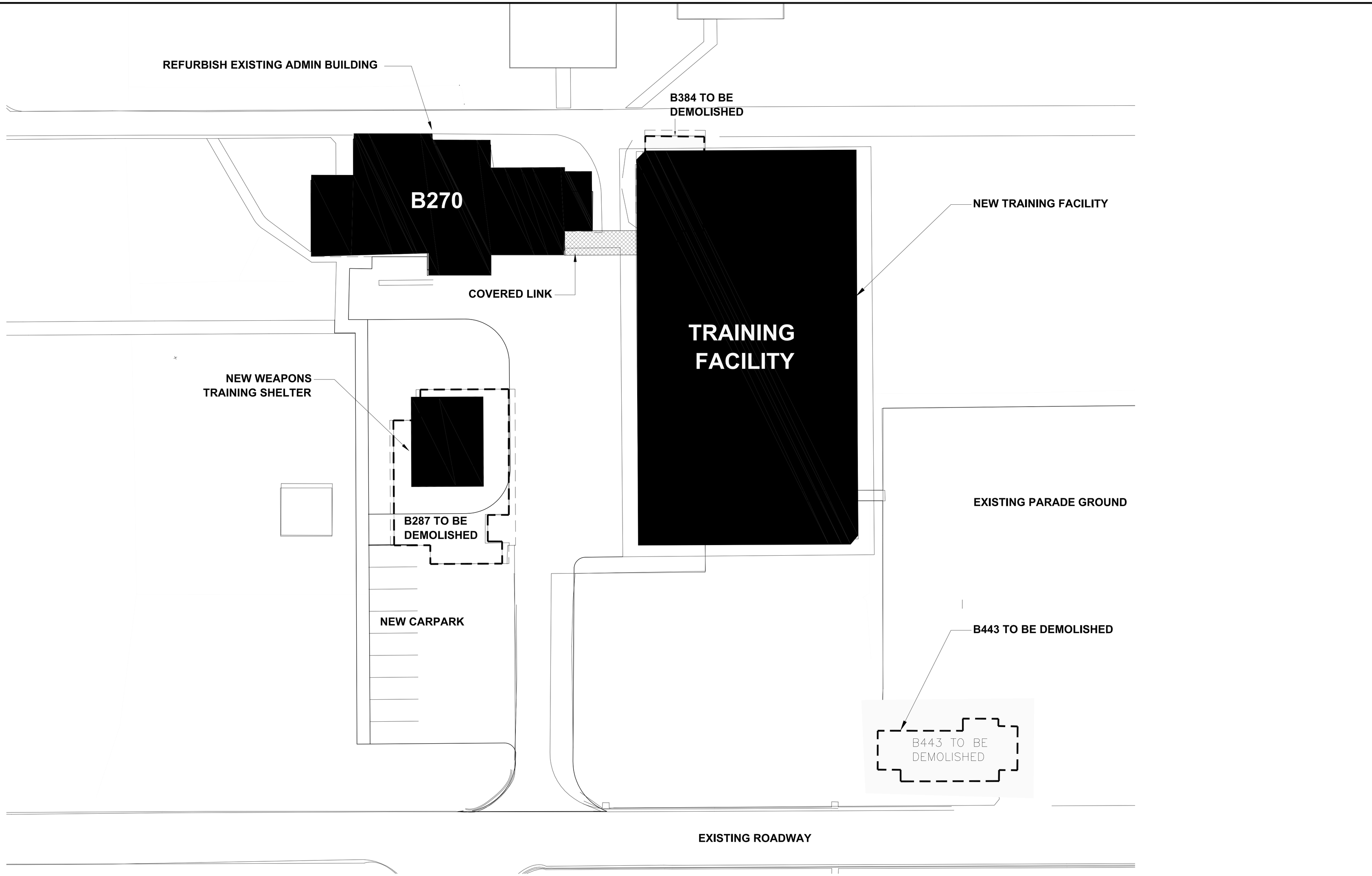
Hames Sharley — ARCHITECTURE INTERIORS URBAN DESIGN PLANNING LANDSCAPE

THINC PROJECTS

KBR
Kellogg Brown & Root Pty Ltd
ABN 91 007 660 317

RAAF BASE EDINBURGH STAGE 2 REDEVELOPMENT
PROJECT ELEMENT 3
92 WING NEW AIR CREW FACILITY

0 1 5 10m



Australian Government
Department of Defence
Defence Support Group

Hames Sharley — Architecture, Interiors, Urban Design, Planning, Landscape

THINC PROJECTS

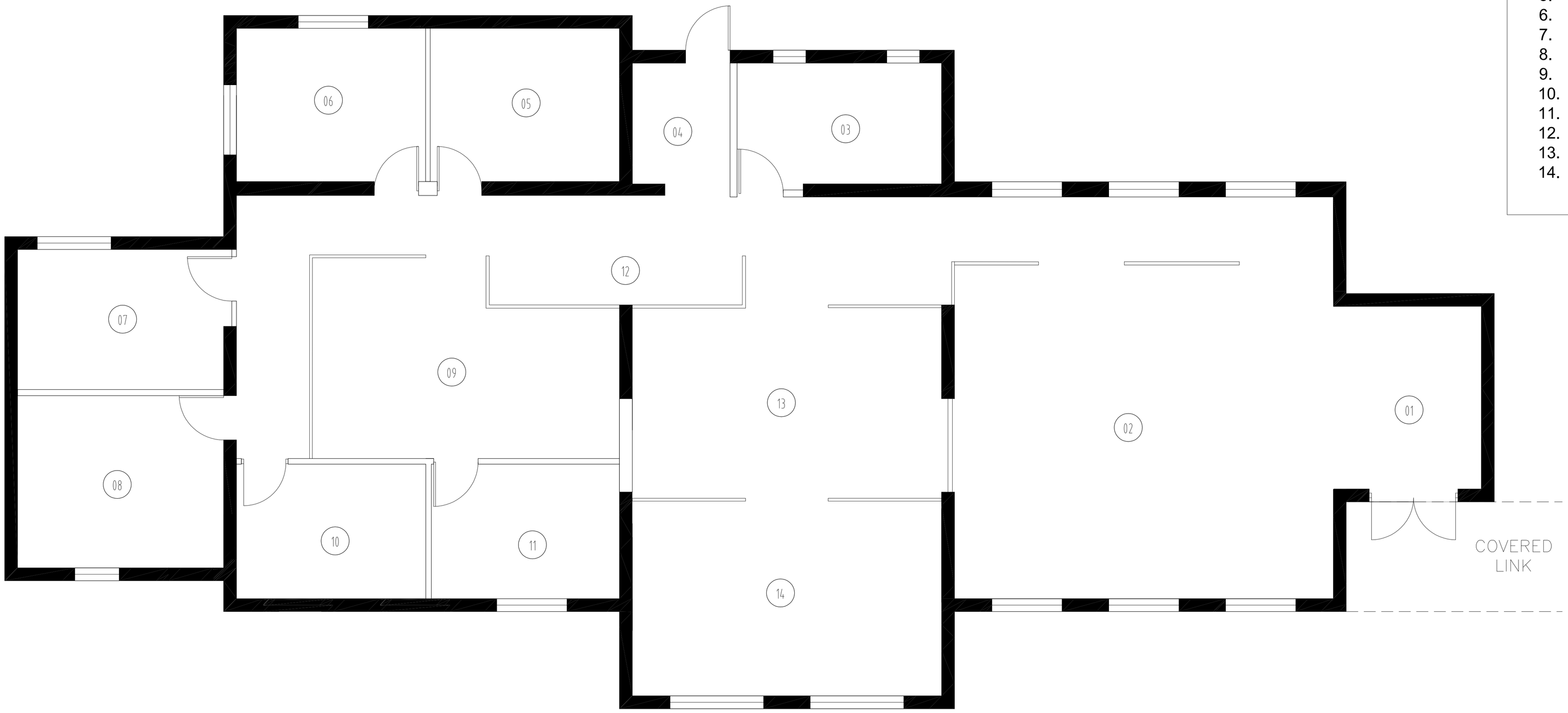
KBR
Kellogg Brown & Root Pty Ltd
ABN 91 007 660 317

RAAF BASE EDINBURGH STAGE 2 REDEVELOPMENT
PROJECT ELEMENT 4
24 SQUADRON SITE PLAN

0 2 10 20m

LEGEND

1. ENTRY
2. OPEN PLAN OFFICE
3. OFFICE
4. BREW
5. OFFICE
6. RESOURCE
7. EXEC OFFICE
8. EXEC OFFICE
9. OPEN PLAN OFFICE
10. SERVER ROOM
11. MEETING ROOM
12. RESOURCE AREA
13. OPEN PLAN OFFICE
14. OPEN PLAN OFFICE



Australian Government
Department of Defence
Defence Support Group

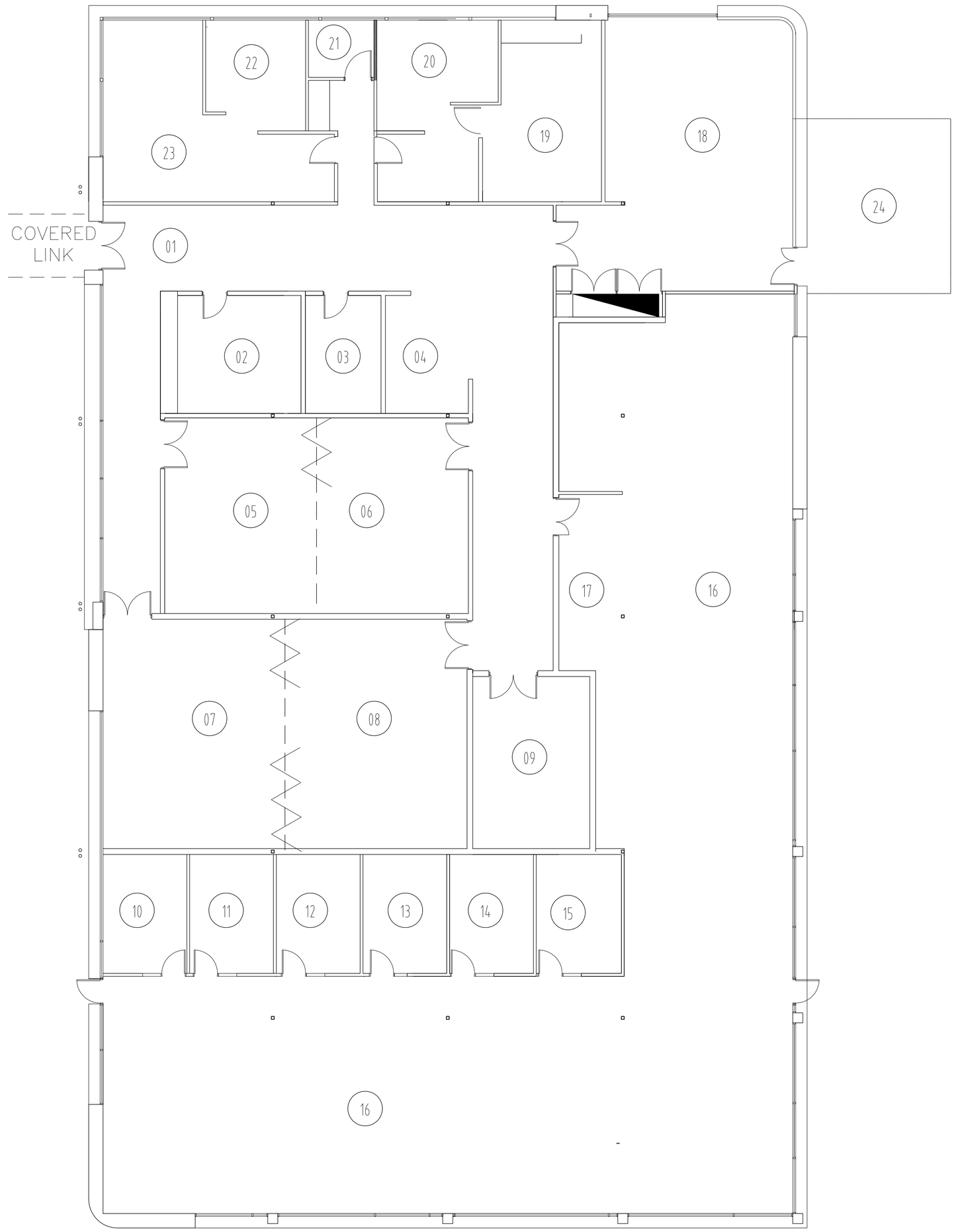
Hames Sharley
ARCHITECTURE
INTERIORS
URBAN DESIGN
PLANNING
LANDSCAPE

THINC PROJECTS

KBR
Kellogg Brown & Root Pty Ltd
ABN 91 007 660 317

RAAF BASE EDINBURGH STAGE 2 REDEVELOPMENT
PROJECT ELEMENT 4
24 SQUADRON B270 REFURBISHMENT PLAN

0 1 2.5 5m



LEGEND

1. ENTRY
2. MEETING ROOM
3. STORE ROOM
4. RESOURCE ROOM
5. CLASSROOM
6. CLASSROOM
7. CLASSROOM
8. CLASSROOM
9. SERVER
10. OFFICE
11. OFFICE
12. OFFICE
13. OFFICE
14. OFFICE
15. STORE ROOM
16. OPEN PLAN OFFICE
17. BREW AREA
18. CREW ROOM
19. FEMALE CHANGE
20. FEMALE WC
21. ACCESS WC
22. MALE WC
23. MALE CHANGE
24. OUTDOOR REC. AREA

Australian Government
Department of Defence
Defence Support Group

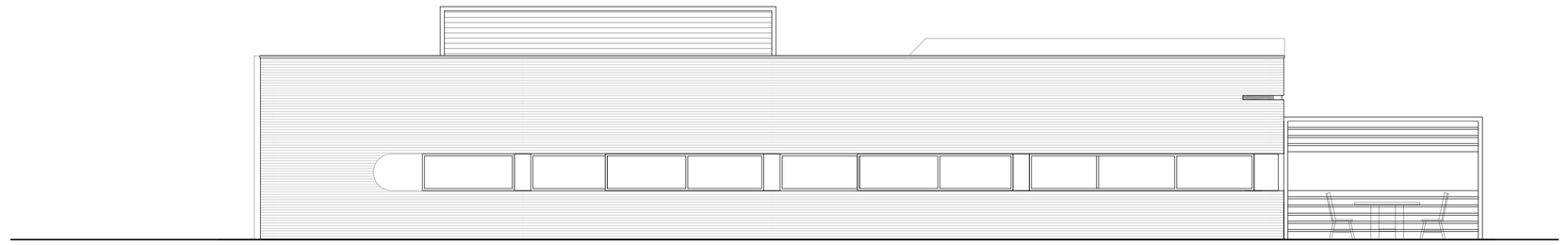
Hames Sharley
ARCHITECTURE
INTERIORS
URBAN DESIGN
PLANNING
LANDSCAPE

R:\QA2\CAD\Projects\AE3700 - 501\Drawings\STANDARDS\hmsc_logo.jpg

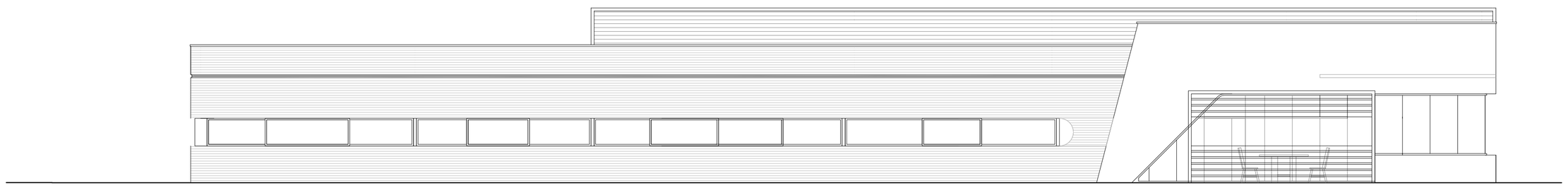
KBR
Kellogg Brown & Root Pty Ltd
ABN 91 007 660 317

RAAF BASE EDINBURGH STAGE 2 REDEVELOPMENT
PROJECT ELEMENT 4
24 SQUADRON NEW TRAINING FACILITY FLOOR PLAN

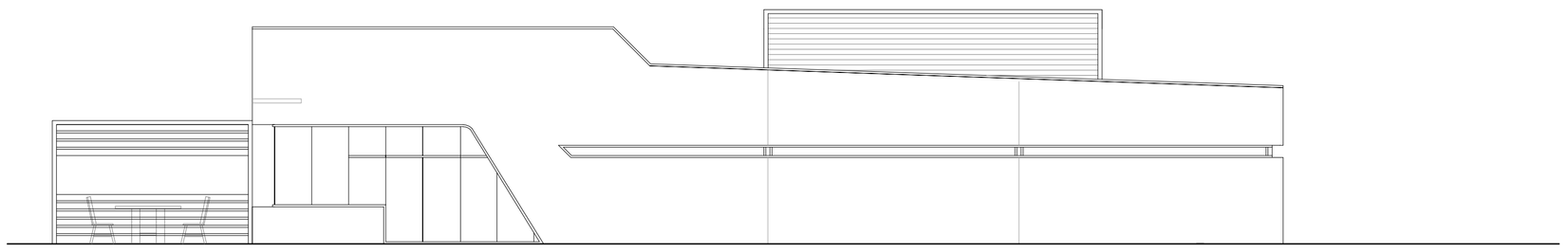
0 1 5 10m



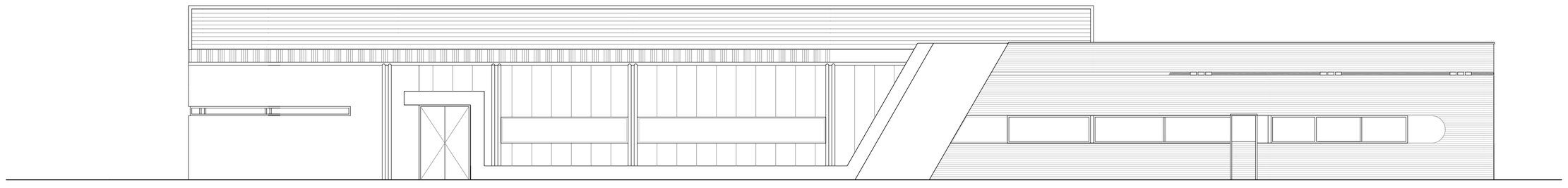
SOUTH ELEVATION



EAST ELEVATION



NORTH ELEVATION



WEST ELEVATION

Australian Government
Department of Defence
Defence Support Group

Hames Sharley
ARCHITECTURE
INTERIORS
URBAN DESIGN
PLANNING
LANDSCAPE

THINC PROJECTS

KBR
Kellogg Brown & Root Pty Ltd
ABN 91 007 660 317

RAAF BASE EDINBURGH STAGE 2 REDEVELOPMENT
PROJECT ELEMENT 4
NEW 24 SQN TRAINING FACILITY ELEVATIONS

0 1 5 10m

EXISTING
TAXIWAY

NEW ATC TOWER

EXISTING TOWER TO BE DEMOLISHED
AT FIRST, SECOND AND THIRD FLOORS
NEW ROOF TO GROUND FLOOR

509

541

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THINC PROJECTS

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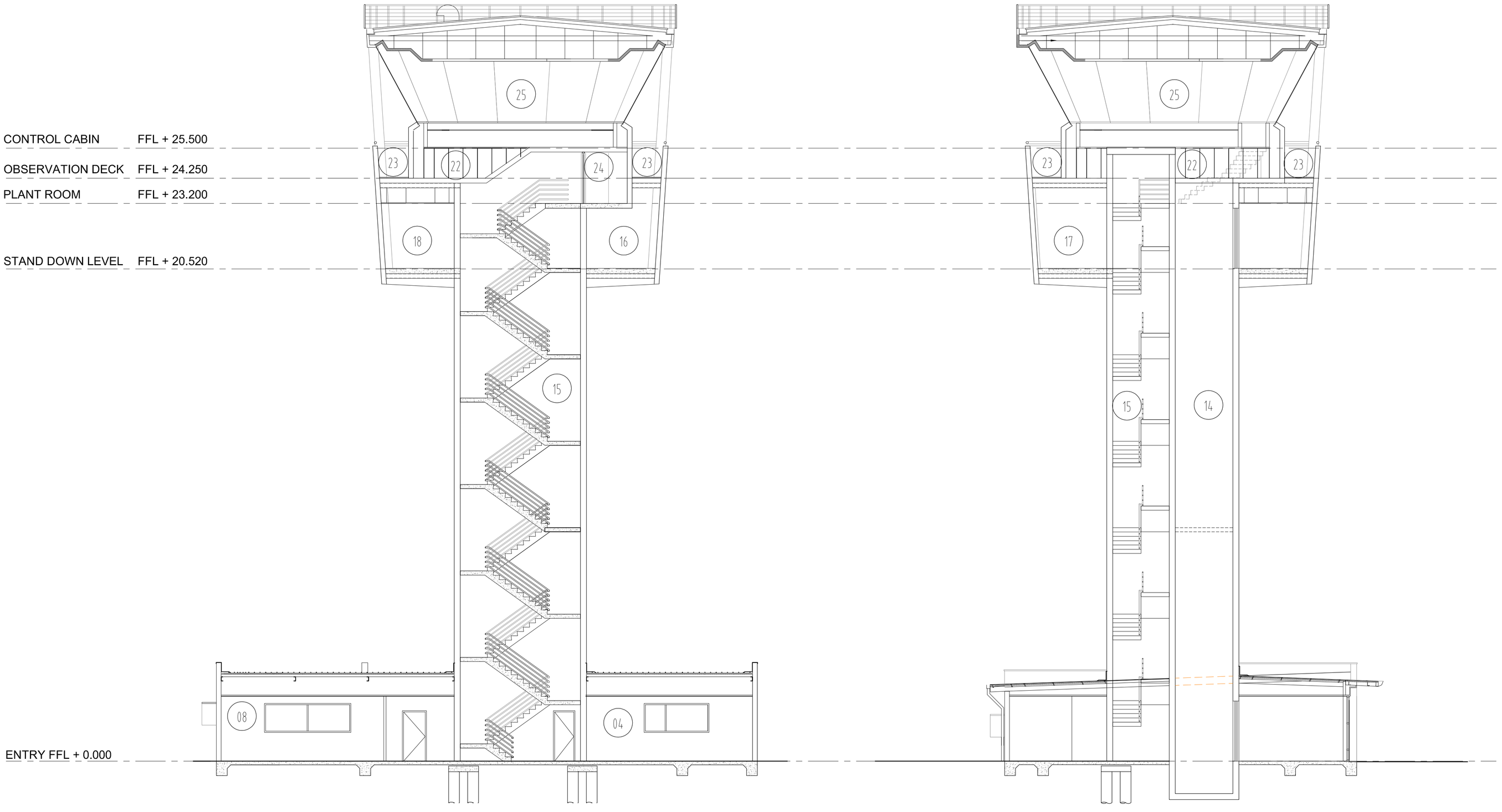
Kellogg Brown & Root Pty Ltd
ABN 91 007 660 317

RAAF BASE EDINBURGH STAGE 2 REDEVELOPMENT
PROJECT ELEMENT 5
NEW AIR TRAFFIC CONTROL TOWER SITE PLAN

0 5 25 50m



LEGEND

1. ENTRY
2. EXEC OFFICE
3. OFFICE
4. ADMIN OFFICE
5. FIRE PASSAGE
6. PLANT ROOM
7. SERVER/STORE
8. WORK ROOM
9. UNISEX WC
10. MALE WC/SHR/CNG
11. MEETING ROOM
12. BREW AREA
13. DUCT RISER
14. LIFT
15. FIRE STAIR
16. RADIO ROOM
17. PLANT ROOM
18. CREW ROOM
19. UNISEX WC
20. UNISEX WC
21. KITCHEN
22. PLANT ROOM
23. OBSERVATION DECK
24. STAIRS
25. CONTROL CABIN

SECTION A

SECTION B

Australian Government
Department of Defence
Defence Support Group

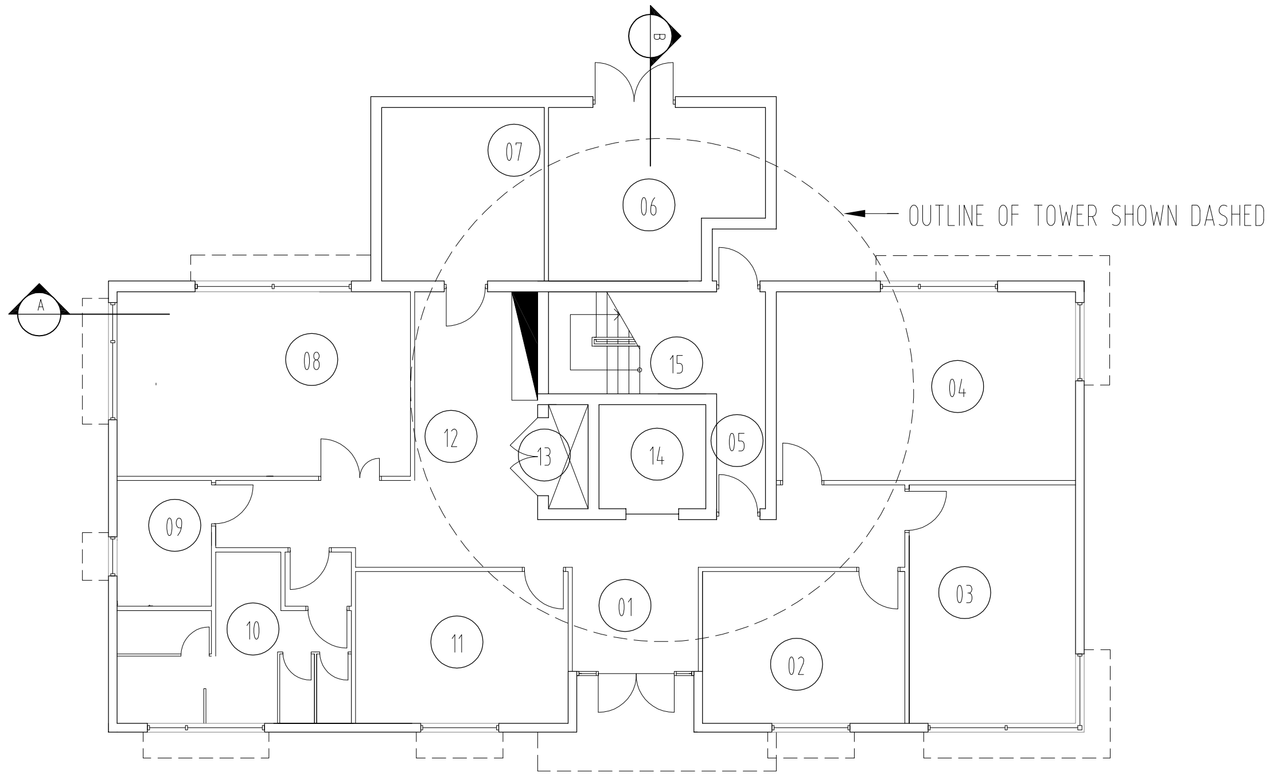
Hames Sharley — ARCHITECTURE INTERIORS URBAN DESIGN PLANNING LANDSCAPE

THINC PROJECTS

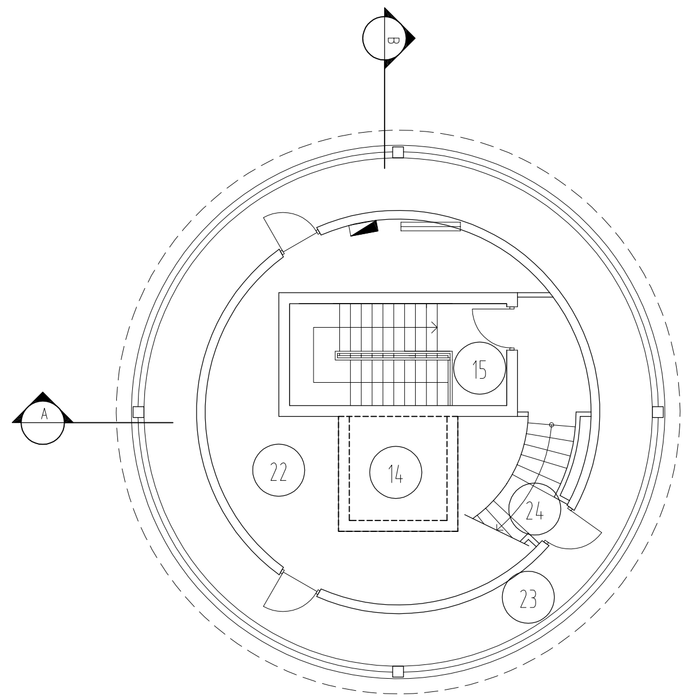
KBR
Kellogg Brown & Root Pty Ltd
ABN 91 007 660 317

RAAF BASE EDINBURGH STAGE 2 REDEVELOPMENT
PROJECT ELEMENT 5
NEW AIR TRAFFIC CONTROL TOWER SECTIONS

0 1 5 10m



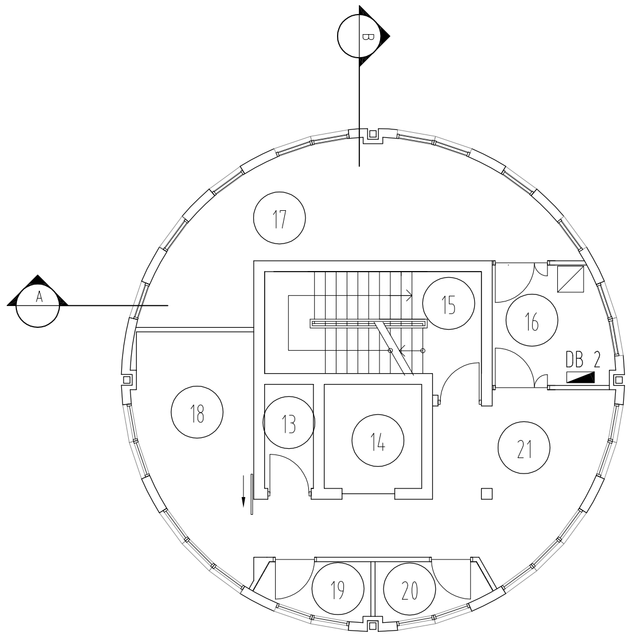
ENTRY LEVEL = RL +0.000



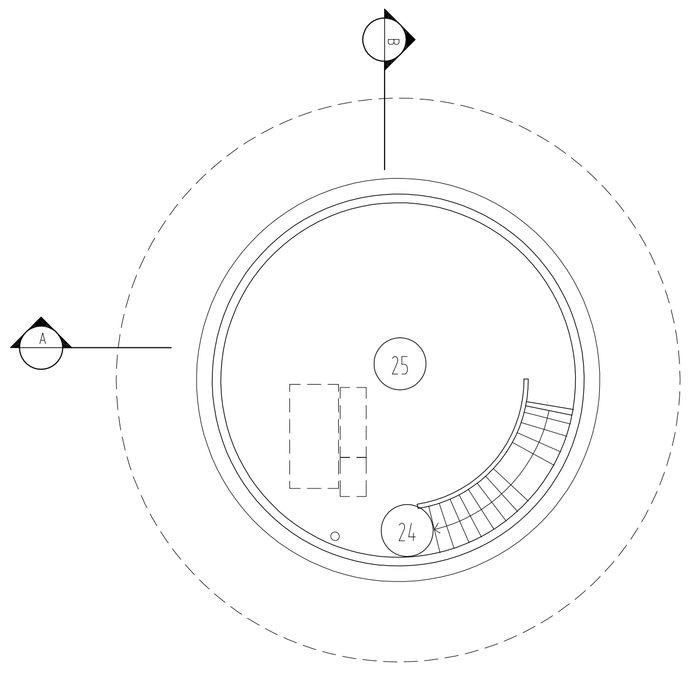
PLANT ROOM LEVEL - RL +23.200
OBSERVATION DECK - RL +24.250

LEGEND

1. ENTRY
2. EXEC OFFICE
3. OFFICE
4. ADMIN OFFICE
5. FIRE PASSAGE
6. PLANT ROOM
7. SERVER/STORE
8. WORK ROOM
9. UNISEX WC/CHANGE
10. MALE WC/SHR/CNG
11. MEETING ROOM
12. BREW AREA
13. DUCT RISER
14. LIFT
15. FIRE STAIR
16. RADIO ROOM
17. PLANT ROOM
18. CREW ROOM
19. UNISEX WC
20. UNISEX WC
21. KITCHEN
22. PLANT ROOM
23. OBSERVATION DECK
24. STAIRS
25. CONTROL CABIN



STAND DOWN LEVEL = RL +20.500



CONTROL CABIN - RL +25.500

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Department of Defence
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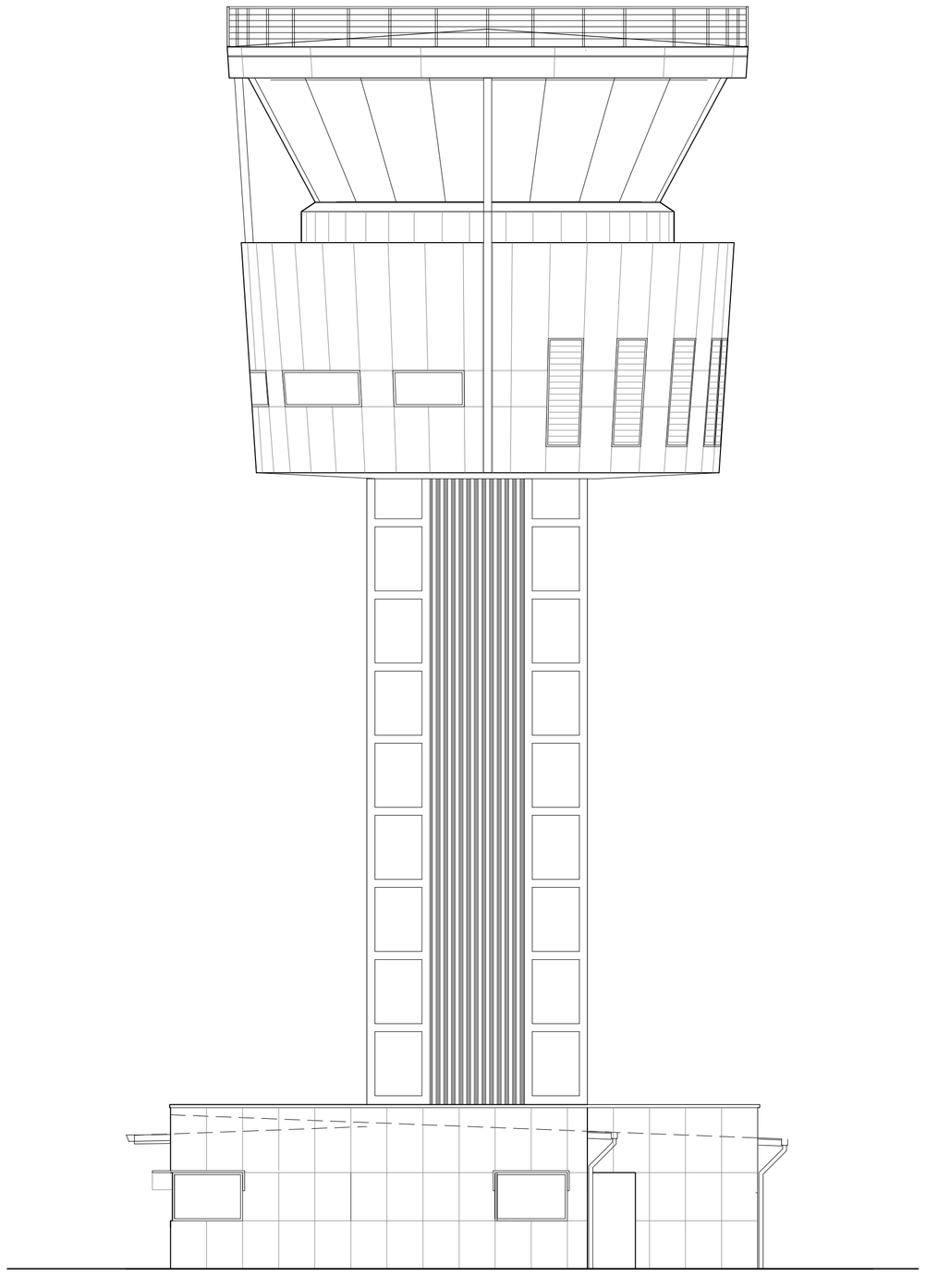
Hames Sharley — ARCHITECTURE INTERIORS URBAN DESIGN PLANNING LANDSCAPE

THINC PROJECTS

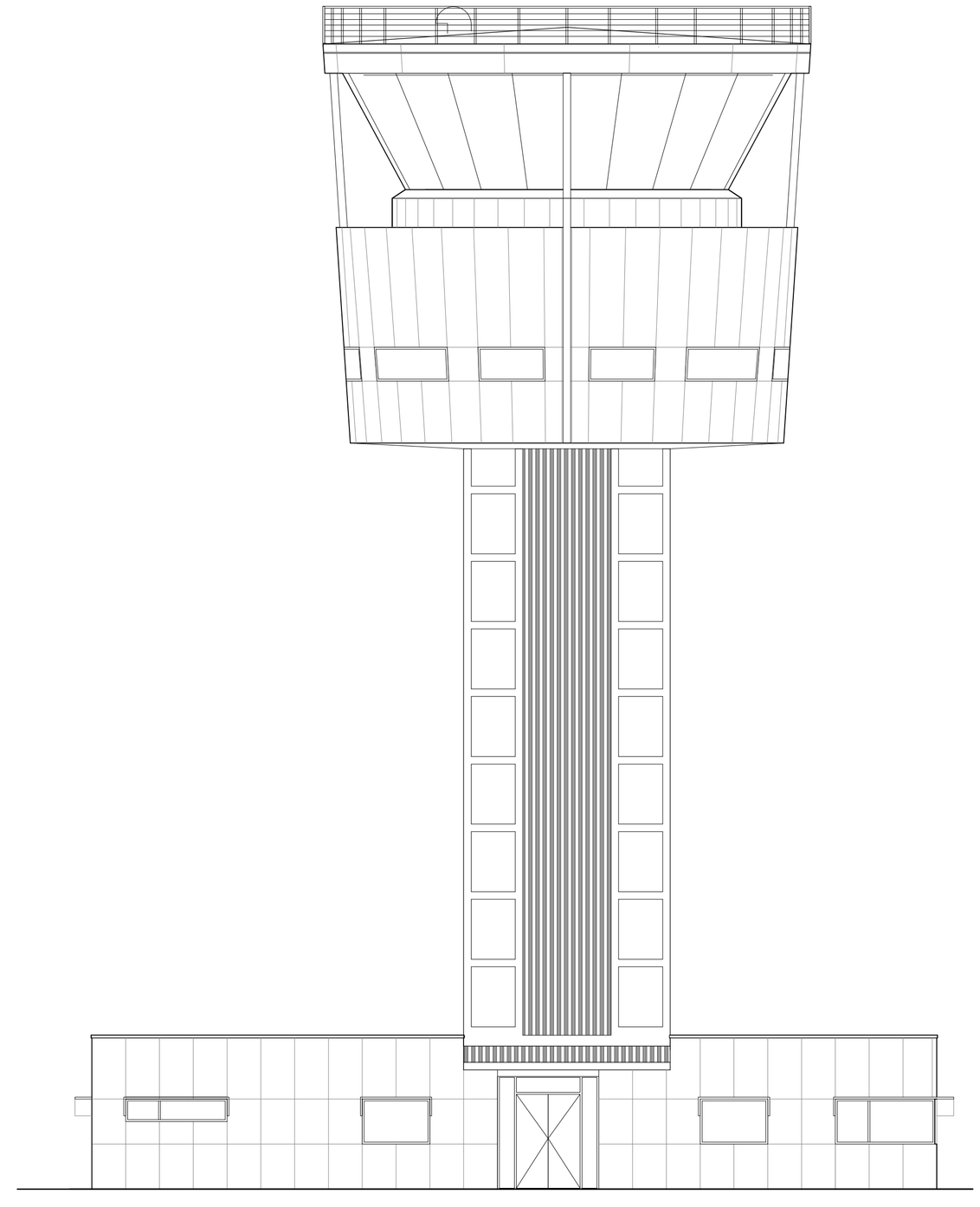
KBR
Kellogg Brown & Root Pty Ltd
ABN 91 007 660 317

RAAF BASE EDINBURGH STAGE 2 REDEVELOPMENT
PROJECT ELEMENT 5
NEW AIR TRAFFIC CONTROL TOWER PLANS

0 1 5 10m



EAST ELEVATION



SOUTH ELEVATION – ENTRY

Australian Government
Department of Defence
Defence Support Group

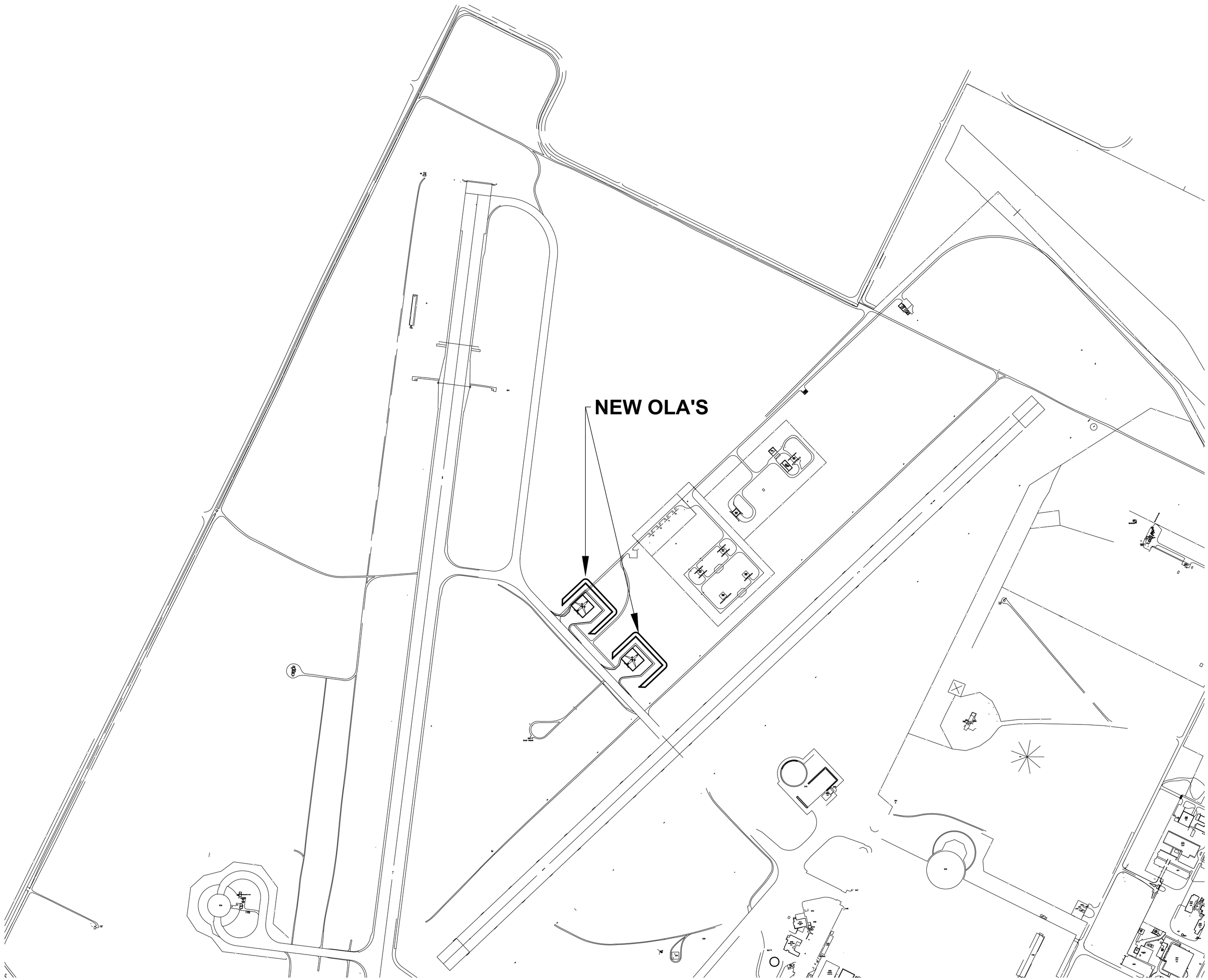
Hames Sharley
ARCHITECTURE
INTERIORS
URBAN DESIGN
PLANNING
LANDSCAPE

THINC PROJECTS

KBR
Kellogg Brown & Root Pty Ltd
ABN 91 007 660 317

RAAF BASE EDINBURGH STAGE 2 REDEVELOPMENT
PROJECT ELEMENT 5
NEW AIR TRAFFIC CONTROL TOWER ELEVATIONS

0 1 5 10m



20 0 20 40 60 80

SCALE 1: 1000 SCALE IN m

Australian Government
Department of Defence
Defence Support Group

THINC PROJECTS

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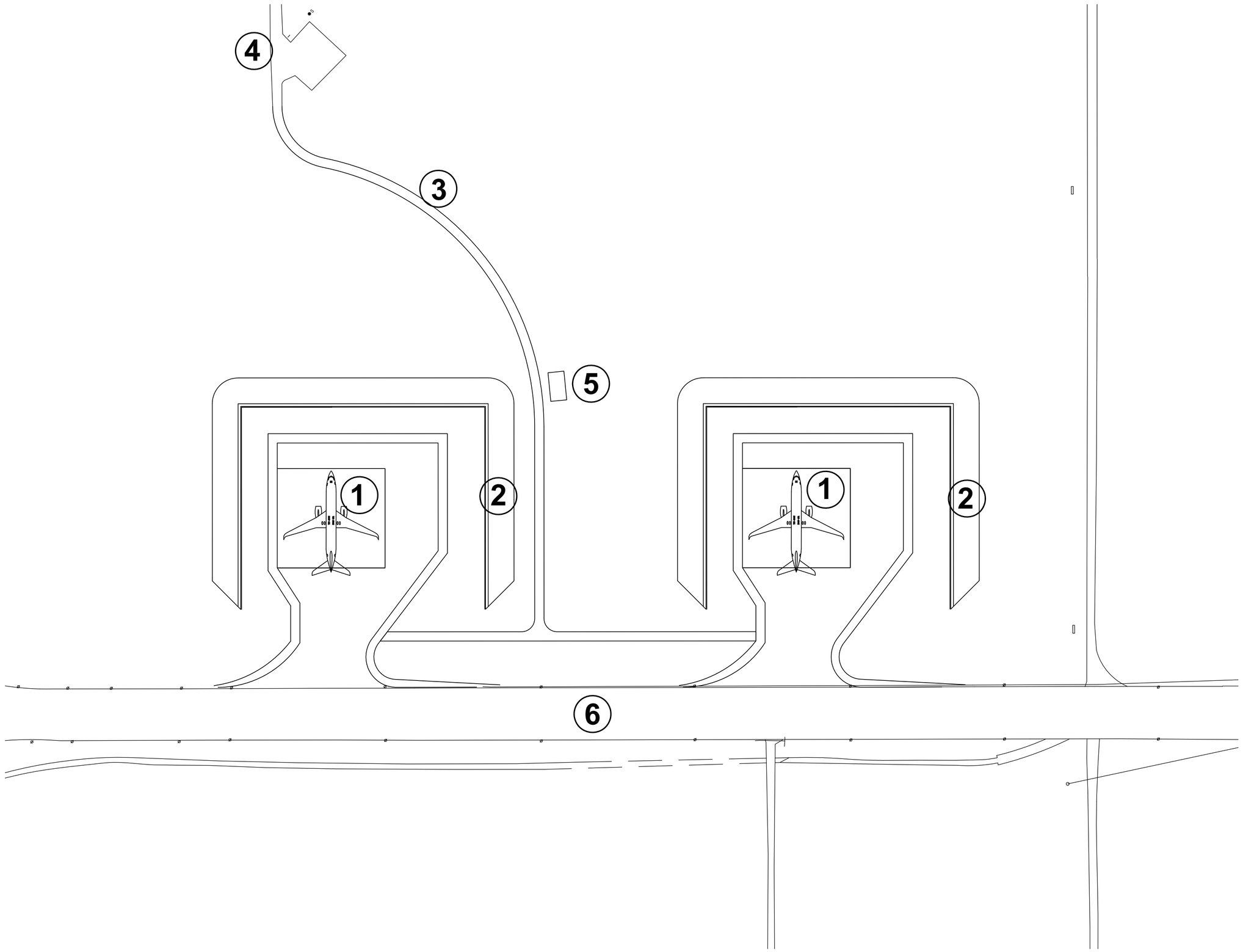
RAAF BASE EDINBURGH STAGE 2 REDEVELOPMENT
PROJECT ELEMENT 6 - ORDNANCE LOADING AREA
ORDNANCE LOADING APRONS SITE PLAN



LEGEND

1. ORDNANCE LOADING APRON
2. REVETMENT
3. NEW ACCESS ROAD
4. EXISTING ACCESS ROADWAY
5. NEW SERVICE HUT
6. EXISTING TAXIWAY

20 0 20 40 60 80

SCALE 1: 1000 SCALE IN m

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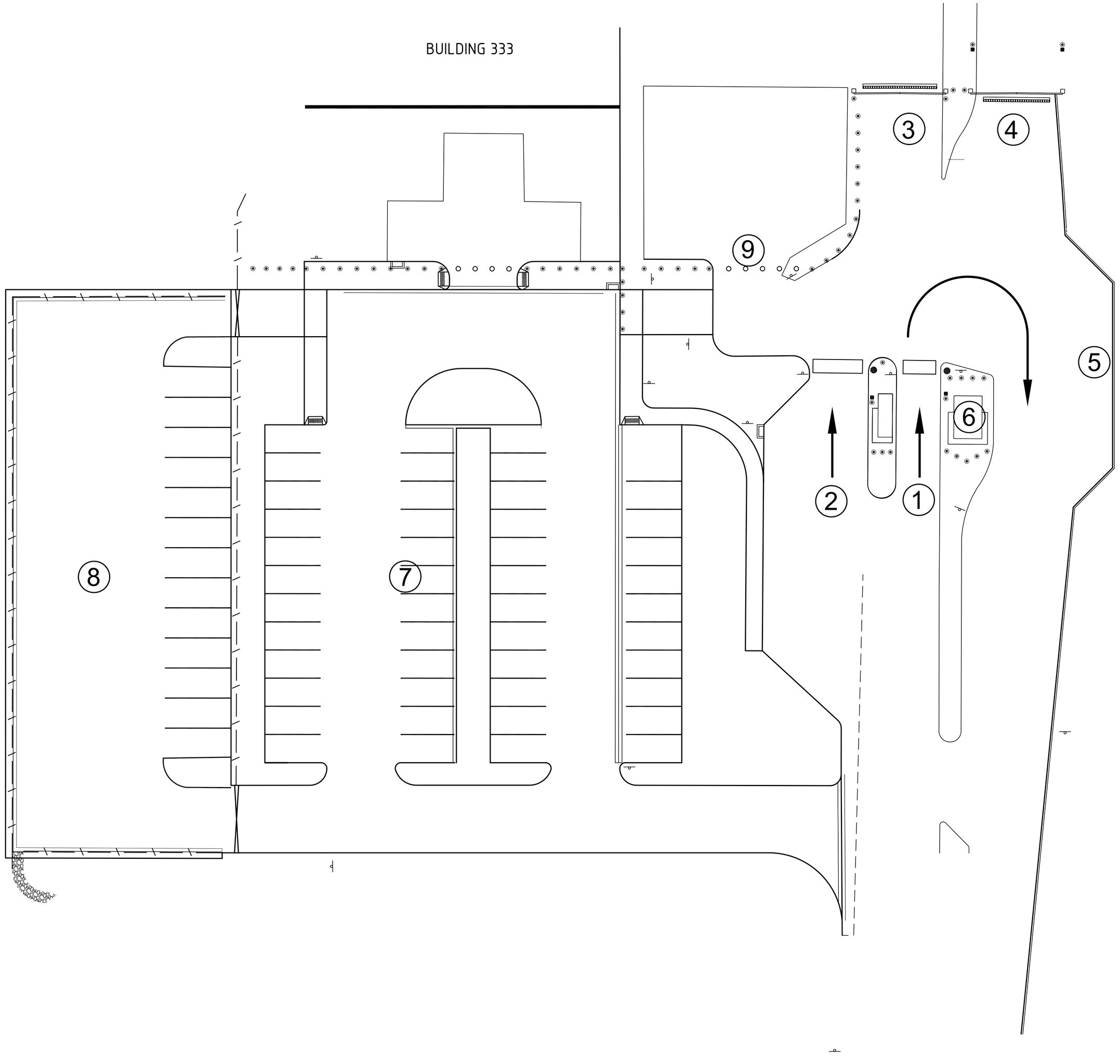
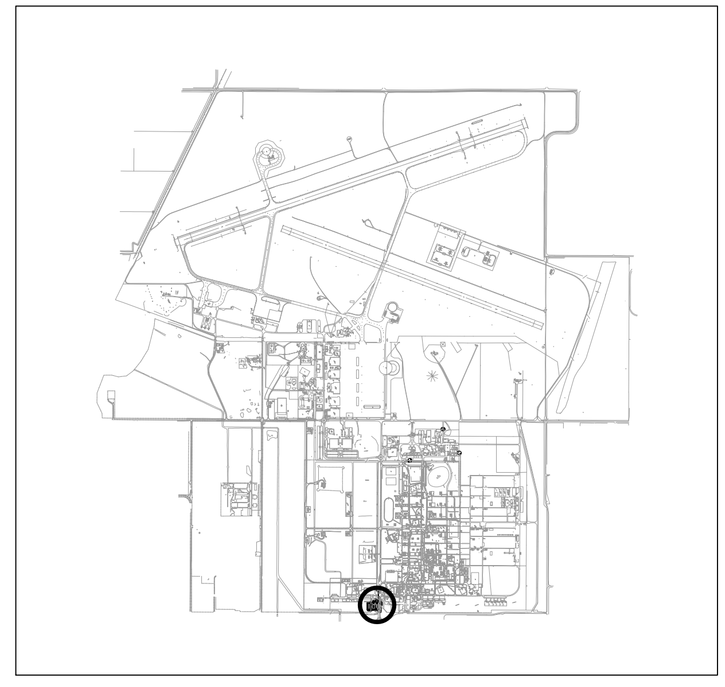
RAAF BASE EDINBURGH STAGE 2 REDEVELOPMENT
PROJECT ELEMENT 6 – ORDNANCE LOADING AREA
ORDNANCE LOADING APRONS LAYOUT PLAN



LEGEND

1. CAR LANE
2. CAR AND LARGE VEHICLE LANE
3. BOOM GATE
4. BOOM GATE
5. VEHICLE TURN AROUND
6. GUARD HOUSE
7. CAR PARK
8. VEHICLE INSPECTION AREA
9. BOLLARDS



KEY PLAN

4000 0 4000 8000 12000 16000

SCALE 1: 200 SCALE IN mm

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Department of Defence
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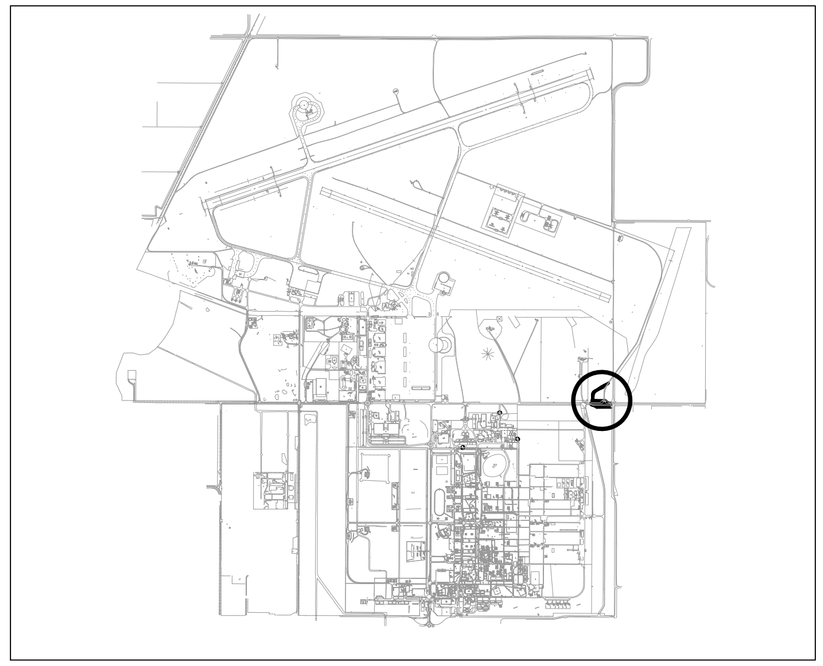
RAAF BASE EDINBURGH STAGE 2 REDEVELOPMENT
PROJECT ELEMENT 7 - PASSIVE DEFENCE
MAIN GATE LAYOUT PLAN



KEY PLAN

LEGEND

1. CAR LANE
2. CAR AND LARGE VEHICLE LANE
3. CAR PARK
4. BOOM GATE
5. BOOM GATE
6. BOOM GATE
7. VEHICLE TURN AROUND
8. GUARD HOUSE
9. STAFF PARKING

4 0 4 8 12 16

SCALE 1: 200 SCALE IN m

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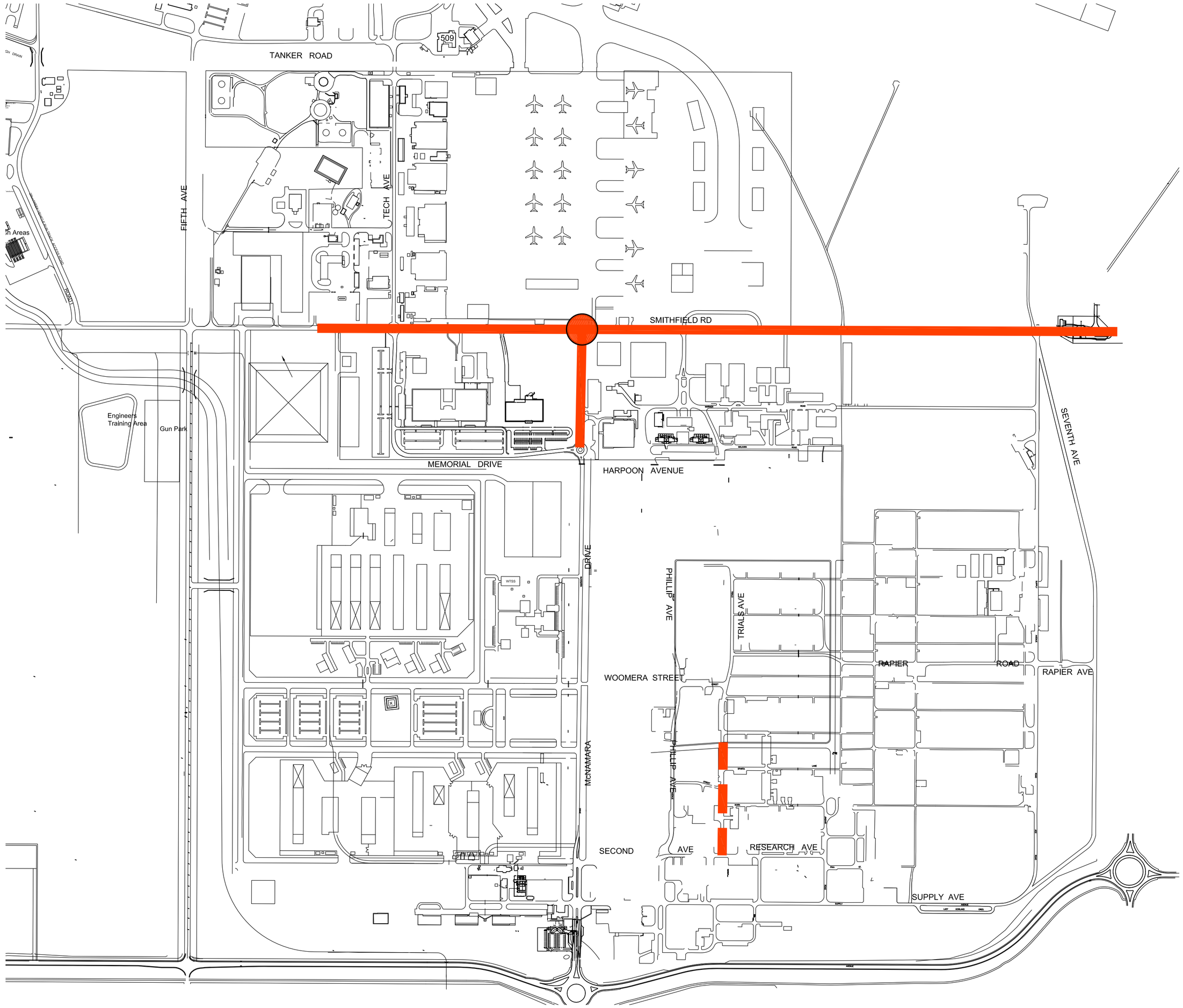
RAAF BASE EDINBURGH STAGE 2 REDEVELOPMENT
PROJECT ELEMENT 7 - PASSIVE DEFENCE
NORTH GATE LAYOUT PLAN



LEGEND

- REBUILD EXISTING ROAD
- REBUILD INTERSECTION
- REBUILD EXISTING ROAD AND CONVERT TO 2 WAY

100 0 100 200 300 400

SCALE 1: 5000 SCALE IN m

Australian Government
Department of Defence
Defence Support Group

THINC PROJECTS
11.07.08
24.06.08

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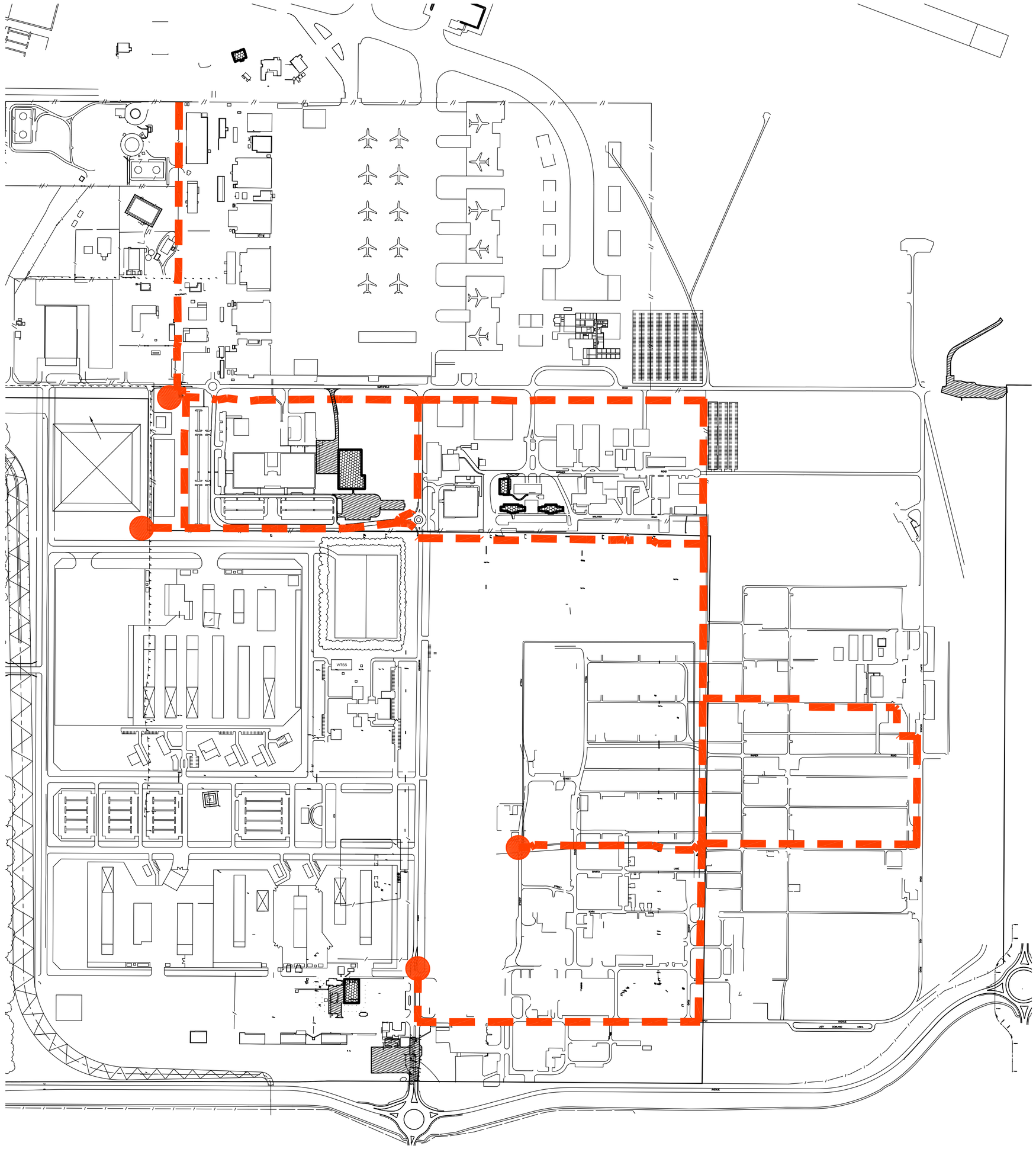
RAAF BASE EDINBURGH STAGE 2 REDEVELOPMENT
PROJECT ELEMENT 8 – INFRASTRUCTURE SERVICES
ROAD RECONSTRUCTION



LEGEND

NEW DOMESTIC, NON-POTABLE AND FIRE WATER

CONNECTION TO EXISTING WATER GRIDS

100 0 100 200 300 400

SCALE 1: 5000 SCALE IN m

Australian Government
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Defence Support Group

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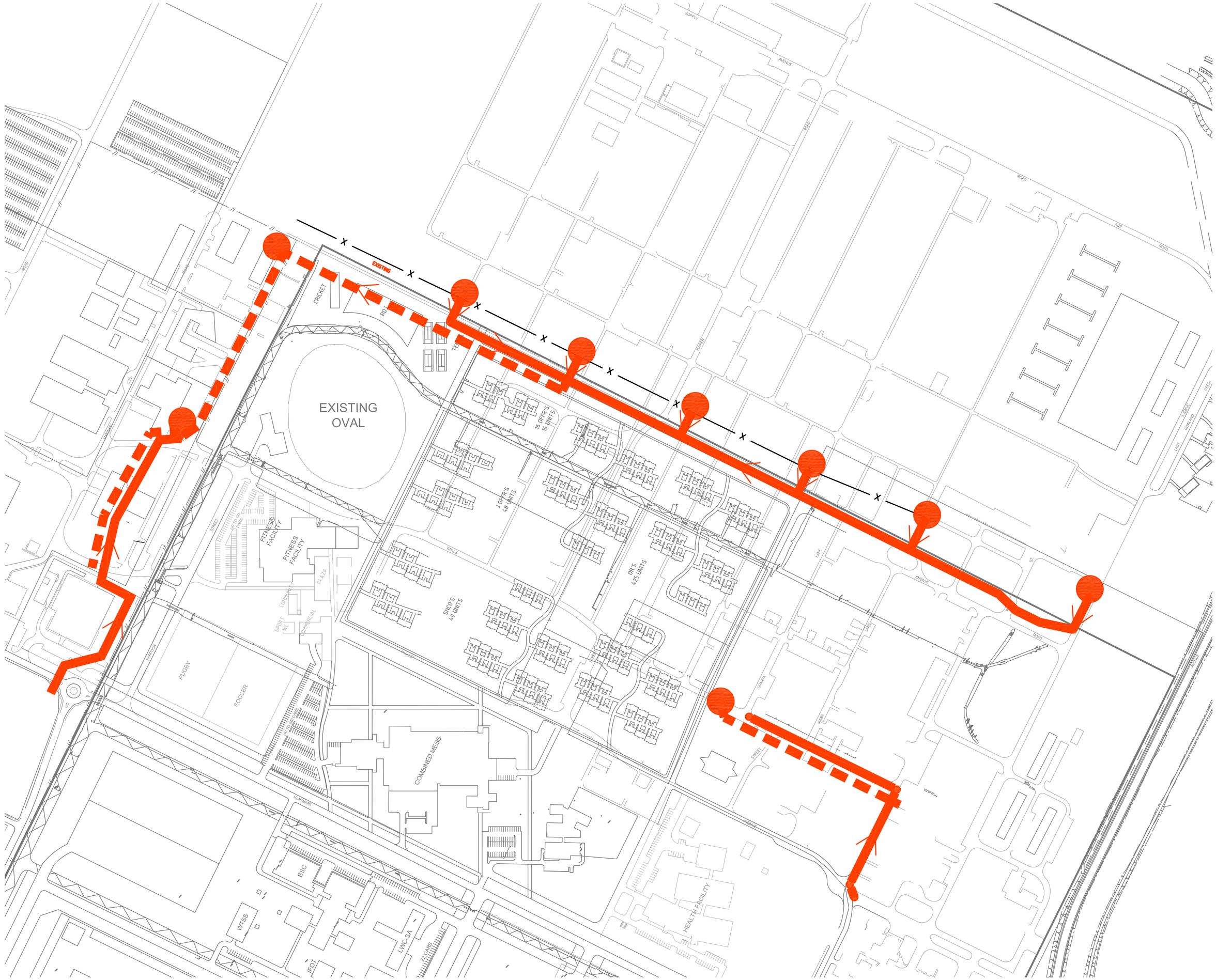
RAAF BASE EDINBURGH STAGE 2 REDEVELOPMENT
PROJECT ELEMENT 8 – INFRASTRUCTURE SERVICES
WATER SUPPLY LAYOUT



LEGEND

- NEW GRAVITY SEWER MAIN
- CONNECTION TO EXISTING
- NEW RISING MAIN

50 0 50 100 150 200

SCALE 1: 2500 SCALE IN m

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Defence Support Group

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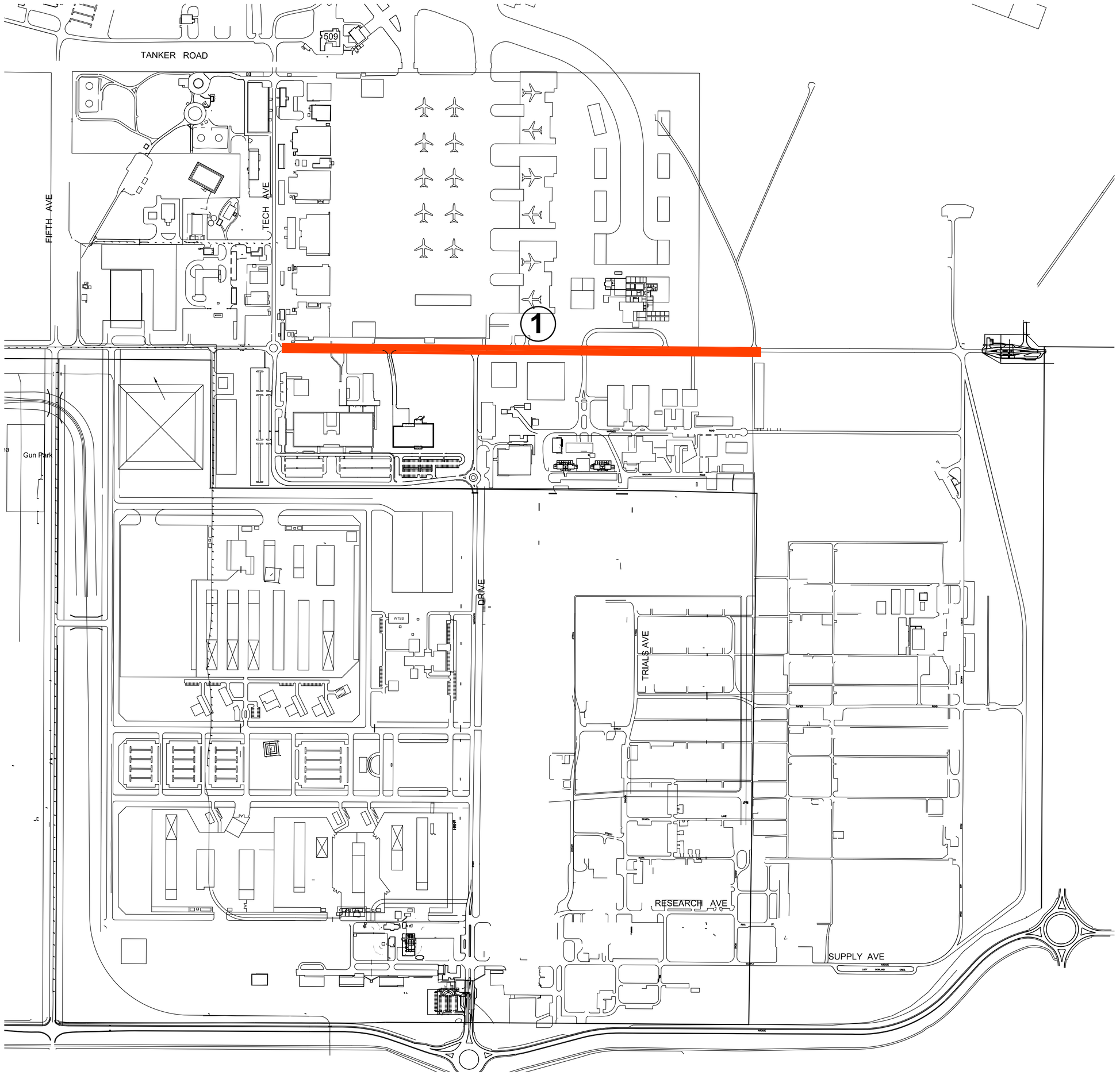
RAAF BASE EDINBURGH STAGE 2 REDEVELOPMENT
PROJECT ELEMENT 8 – INFRASTRUCTURE SERVICES
SEWER LAYOUT



LEGEND

NEW CULVERTS AND RESHAPED SWALES TO ROAD ALIGNMENT

100 0 100 200 300 400

SCALE 1: 5000 SCALE IN m

Australian Government
Department of Defence
Defence Support Group

THINC PROJECTS
11.07.08
24.06.08

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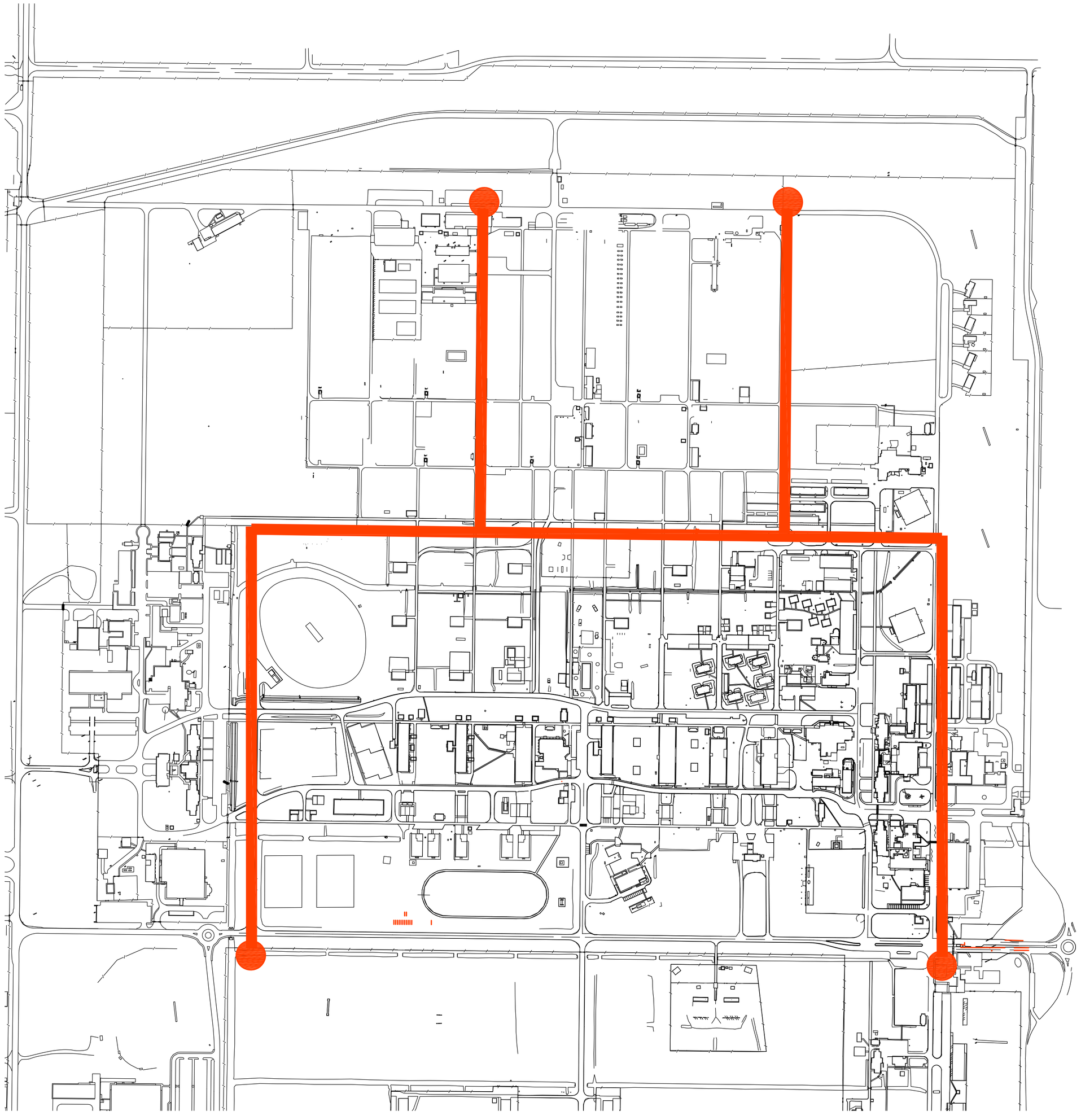
RAAF BASE EDINBURGH STAGE 2 REDEVELOPMENT
PROJECT ELEMENT 8 - INFRASTRUCTURE SERVICES
STORMWATER LAYOUT PLAN



LEGEND

NEW PATHWAY OPTIC FIBRE CONDUIT

NEW CONNECTION TO EXISTING OPTIC FIBRE CONDUIT NETWORK

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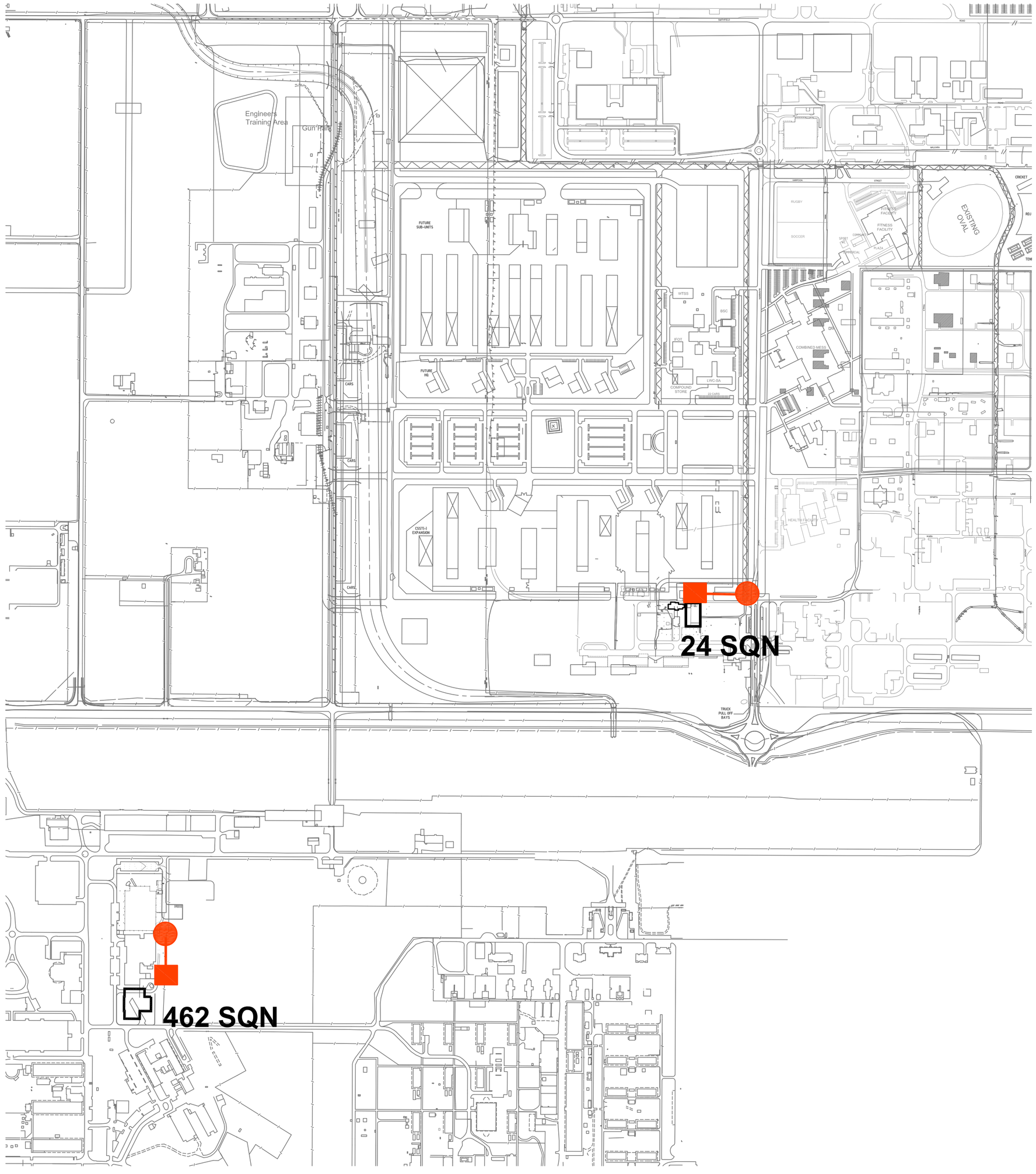
RAAF BASE EDINBURGH STAGE 2 REDEVELOPMENT
PROJECT ELEMENT 8 - INFRASTRUCTURE SERVICES
COMMUNICATIONS LAYOUT



LEGEND

- HIGH VOLTAGE LINE
- CONNECTION TO EXISTING HIGH VOLTAGE GRID
- SUBSTATION

100 0 100 200 300 400

SCALE 1: 5000 SCALE IN m

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RAAF BASE EDINBURGH STAGE 2 REDEVELOPMENT
PROJECT ELEMENT 8 - INFRASTRUCTURE
SITE ELECTRICAL DISTRIBUTION