

Submission No. 01

(Landing helicopter dockships)

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Australian Government

Department of Defence

LANDING HELICOPTER DOCK SHIP SUSTAINMENT FACILITIES

Garden Island Defence Precinct and Randwick Barracks,
Sydney, New South Wales

STATEMENT OF EVIDENCE TO THE PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS

Canberra, Australian Capital Territory

March 2013

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Contents

Need for the Works	1
Identified Need	1
Options Considered for Fulfilling the Need	3
Historical Background	7
Environment and Heritage Assessment Process	7
Heritage Impact	7
Environmental Impact	8
Key Legislation	9
Impacts on Local Communities	9
Consultation with Stakeholders	10
Purpose of Works	10
Project Objectives	10
Site Selection	11
Project Locations	11
Project Scope of Works	11
Public Transport	16
Local Road and Traffic Concerns	17
Zoning, Local Approvals and Land Acquisition	18
Planning and Design Concepts	18
Structural Design	18
Materials and Furnishings	19
Mechanical Services	19
Hydraulic Services	19
Electrical Services and Fire Protection	19
Acoustics	20
Landscaping	20
Water and Energy Conservation Measures	20
Demolition and Disposal of Existing Structures	22
Provisions for People with Disabilities	23
Childcare Provisions	23
Work Health and Safety Measures	23
Cost-Effectiveness and Public Value	24
Outline of Project Costs	24
Details of Project Delivery System	24
Construction Schedule	25
Public Value	25
Revenue	25

Attachments

1. Characteristics of the *Canberra* Class Landing Helicopter Dock
2. Location Plan
3. Stakeholder List
4. Garden Island Site Plan
5. Randwick Barracks Site Plan
6. Training Centre Site/Ground Floor Plan (Randwick Barracks)
7. Training Centre Level 1 Floor Plan (Randwick Barracks)
8. Training Centre Elevations (Randwick Barracks)
9. Training Centre Perspective - view from proposed Carpark (Randwick Barracks)
10. Through Life Support Facility & System Program Office Site/Ground Floor Plan (Garden Island)
11. Through Life Support Facility & System Program Office Level 1 Floor Plan (Garden Island)
12. Through Life Support Facility & System Program Office Level 2 Floor Plan (Garden Island)
13. Through Life Support Facility & System Program Office Elevations (Garden Island)
14. Through Life Support Facility & System Program Office Perspective - view from existing Recreational Area (Garden Island)
15. Integrated Platform Monitoring System Remote Monitoring Site Floor Plan (Building 122, Garden Island)
16. Infrastructure Plan (Garden Island)

Landing Helicopter Dock

Ship Sustainment Facilities

Need for the Works

Identified Need

1. In order to replace and enhance elements of the then Australian Defence Force (ADF) amphibious capability, the Defence Capability Plan (DCP) 2004-14 defined the requirement to replace the Royal Australian Navy (RAN) Heavy Landing Ship HMAS *Tobruk* by 2010 (through Joint Project (JP) 2048 Phase 4A) and to then replace the two RAN Amphibious Landing Ships (HMAS *Manoora* and HMAS *Kanimbla*) during the period 2010 to 2014 (through JP 2048 Phase 4B).
2. During the capability development ‘needs phase’, Defence identified two existing Landing Helicopter Dock (LHD) designs that would meet the defined capability requirement for both JP 2048 Phase 4A and 4B—the Mistral by Armaris of France, and the BPE or Strategic Projection Ship by Izar (now Navantia) of Spain. In 2005, this approach to meeting the defined capability requirements was endorsed by the Australian Government and in DCP 2006-16, JP 2048 Phases 4A and 4B were amalgamated into JP 2048 Phase 4A/B LHD Ship Build Program.
3. In 2007 the Australian Government approved the acquisition of two new *Canberra* Class Landing Helicopter Dock (LHD) amphibious assault ships (based on the Navantia design) through the JP 2048 Phase 4A/B LHD Ship Build Program. The *Canberra* Class LHDs will provide the ADF with one of the most capable and sophisticated air-land-sea amphibious deployment systems in the world and will deliver to the Australian Government an affordable, effective, flexible and sustainable amphibious capability for the defence of Australia and its national interests.
4. Specifically, each LHD will be able to embark, transport and deploy a force of over 1,000 personnel by air (with the LHD’s flight deck allowing the operation of a range of ADF rotary

wing aircraft) and sea, along with all their weapons, ammunition, vehicles and stores. The LHDs have also been designed with the shallowest possible draft to allow them to operate in secondary ports and harbours as well as manoeuvre tactically in the shallow waters common to littoral regions. The LHDs will also be capable of conducting and supporting humanitarian missions and will be jointly crewed with personnel from Navy, Army and Air Force to form a ships company of approximately 400. A rendering of the *Canberra* Class LHD and a summary of its basic characteristics are detailed at Attachment 1.

5. The *Canberra* Class LHD hulls are being built, including the majority of the fit-out, by Navantia (subcontracted to BAE Systems) at the Fene-Ferrol Shipyard in Spain. The hulls are then be transported to Australia as individual lifts on a 'float on / float off' heavy lift ship. Construction of the LHD superstructures and their consolidation with the hulls are then conducted by BAE Systems in their Williamstown Shipyard in Victoria (VIC). The first LHD hull arrived at the Williamstown Shipyard in October 2012. BAE Systems will also be responsible for the final fit-out, set-to-work, docking and trials of the LHDs.
6. The first of the LHDs, HMAS *Canberra*, will be the largest class of ship that the RAN has ever operated. HMAS *Canberra* is due to arrive in its home-port of Sydney, New South Wales (NSW) in early 2014, with the second LHD expected to arrive in Sydney in mid 2015.
7. The ADF base in Sydney at which the LHDs will be home-ported and from where they will deploy on operations is Fleet Base East, which is located within the Garden Island Defence Precinct (Garden Island).
8. To enable the introduction into service of the two new *Canberra* Class LHDs and then sustain the capability these ships are required to generate over their life of type, there is the need to enhance and augment existing infrastructure in Sydney to support LHD specific crew training, combat and platform systems, through life support and maintenance, and berthing.
9. Accordingly, the LHD Ship Sustainment Facilities project proposes to provide permanent training, systems support and maintenance facilities, and berthing infrastructure within the Sydney region in order to sustain the LHD capability and support the mounting of LHD operations from Fleet Base East.

Options Considered for Fulfilling the Need

10. **Strategic siting options.** On 22 June 2011, the Minister for Defence announced a Force Posture Review to assess whether the ADF is correctly geographically positioned to meet Australia's current and future strategic challenges. The subsequent *Australian Defence Force Posture Review*¹ (the Review) was submitted to the Australian Government on 30 March 2012.
11. The Review outlines a range of options for Government consideration, which are being considered as part of the 2013 Defence White Paper development process. The Review also states that 'while the recommendations in this report are expressed in the form, 'Defence should...' most of these recommendations would in fact require decisions by Government before Defence would have the authority and the resources to implement them.'²
12. With respect to ADF basing, the Review states that 'ADF bases have two main functions: generating and sustaining capability, and mounting and supporting operations. Some bases are better suited for only one of these roles, or one particular element of a role such as training, while others can effectively fulfil both roles. Generating and sustaining military capability requires bases to have a number of key characteristics. Bases must have sufficient facilities, infrastructure and training areas for their 'raise, train and sustain' activities, access to necessary industry support for platforms and systems and access to services for ADF members and their families. The importance of both 'industry support' and 'family friendly' locations that facilitate recruitment and retention is also recognised in the strategic basing principles as set out in the 2009 Defence White Paper.'³
13. With respect to the challenges facing ADF basing in the generation and sustainment of future capabilities, the Review notes that the greatest challenge will result from the introduction into service of the new *Hobart* Class Air Warfare Destroyers (AWDs) and the new *Canberra*

¹ A. Hawke and R. Smith, 'Australian Defence Force Review', 30 March 2012

² Ibid, p.4

³ Ibid, p.2

Class LHDs, which at approximately 27,800 tonnes and 231 metres long will be the largest class of ship that the RAN has ever operated.⁴

14. With respect to the basing or ‘home-porting’ of the LHDs, the Review states that ‘The ADF’s new amphibious capability will present a number of force posture challenges in relation to the basing of large amphibious ships and the requirements of mounting amphibious operations. Large amphibious ships should be home-ported at a location where the ships can be maintained and sustained most effectively and efficiently, can deploy within required timeframes to mounting bases at Brisbane, Darwin and Townsville to embark Army manoeuvre and enabling force elements for amphibious operations, and can deploy to training areas suitable for exercising joint amphibious capability.’⁵
15. As such the Review notes that an east coast home-port for the LHDs is therefore appropriate given the locations of relevant Army units and training areas, although it is not essential for the LHDs to be home-ported in the same location as the Army forces they will embark.⁶ The reason for this being that Army elements of an amphibious task force will generally require time to assemble and ready themselves for embarkation, thus allowing sufficient transit time for the LHDs. Accordingly, the Review noted that Fleet Base West is not a preferred location for the LHDs given there are no regular Army manoeuvre brigades in Western Australia.⁷
16. The Review also notes that it would be advantageous for the LHDs to be based outside the ‘cyclone belt’ to avoid the risk of damage to the ships themselves or their home-port facilities, and with appropriate preparedness levels, this will not compromise their ability to conduct timely disaster relief operations in Northern Australia and our immediate neighbourhood.
17. From a RAN perspective, the LHDs are likely to be deployed on amphibious operations as part of a larger task group. Therefore, in addition to the efficient embarkation and deployment of land and air elements, there are also the requirements for safe transit, amphibious asset protection and confident interoperability within the task group, all of which will be essential to the successful conduct of amphibious operations. Therefore, ongoing

⁴ Ibid, p.28

⁵ Ibid, p.29

⁶ Ibid

⁷ Ibid, p.30

interaction and training with other maritime assets that may make up such a task group (such as the AWDs) are at least as important as the capacity to embark Army elements within an appropriate timeframe. Home-porting of the LHD in proximity to the wider surface fleet at Fleet Base East, with access to forward bases or commercial ports that can provide basic resupply of provisions and allow embarkation of Army elements, effectively meets this requirement.

18. With respect to Fleet Base East as a home-port for the LHDs, the Review states that ‘In the short-term, given its excellent infrastructure and support capacity, and the current lack of alternatives, Fleet Base East in Sydney Harbour is the only viable option for LHD home-port basing. In the longer-term, an alternative location on the east coast might offer operational advantages through closer proximity to Army units and potential operating areas, while also enhancing capability sustainment requirements and relieving pressure on Navy’s continued use of Fleet Base East’.⁸
19. However, the Review also considers that ‘the encroachment and commercial sector pressures – including the cruise ship industry’s requests for berth access – could present increasing challenges in the future, particularly for accommodating large ships such as the LHD at Garden Island in Sydney.’⁹
20. The Review subsequently discusses some options for fleet basing to accommodate these pressures, including a possible future supplementary fleet base, but goes on to conclude that ‘Any option for enhanced cruise ship access to Garden Island in Sydney should not come at the expense of the primacy of Defence access or operational outcomes’,¹⁰ and makes the recommendation that ‘Defence should proceed with its plans to homeport the AWDs and LHDs at Fleet Base East in the short-term but also develop additional options involving Brisbane and Fleet Base West.’^{11,12}

⁸ Ibid, p.30

⁹ Ibid

¹⁰ Ibid

¹¹ Ibid, p.35

¹² An analysis of a supplementary base in Brisbane has been undertaken, however Government is yet to consider the recommendations, which are also to be considered as part of the 2013 Defence White Paper development process. An assessment of Fleet Base West’s capacity to berth a forward deployed AWD has also been undertaken and is also yet to be considered by Government.

21. **Operational siting options.** Consistent with Defence planning policy, Defence has considered various siting options within the Sydney region for the location of the proposed facilities required to generate and sustain the LHD capability.
22. In assessing and selecting the sites, Defence has sought to maximise the use of existing infrastructure to create synergies with respect to the functions of training, through life systems support and maintenance, to provide ease of access to ships' crews and industry / contractor support, and to minimise any potential environmental, heritage or community impacts. The sites subsequently selected within the Sydney region were Garden Island and Randwick Barracks. A plan showing the relative location of each of these sites is at Attachment 2.
23. Within each of the selected sites, various site layout options have also been considered to ensure that the site layouts as proposed are functional and cost effective.
24. **Procurement options.** Defence considered a number of procurement options for the delivery of the proposed facilities, including:
 - a. delivery of the facilities via a traditional contracting methodology; and
 - b. delivery of the facilities through a public-private partnership arrangement.
25. The options analysis concluded that delivery of the proposed facilities via a traditional contracting methodology would offer better value for money as compared to a public-private partnership arrangement, which in addition to being considered not cost effective was also considered not commercially attractive. This chosen form of procurement also offers Defence:
 - a. greater flexibility in controlling delivery time frames;
 - b. greater flexibility in managing likely disruptions due to construction; and
 - c. greater cost certainty.
26. **Adaptive reuse / refurbishment options.** To meet the identified need, Defence has considered the viability of adaptively re-using or refurbishing existing facilities to reduce the need for new construction. In most cases, the option to re-use facilities was found not to be cost effective due to dilapidation, structural inadequacy, dysfunctional layout and / or inappropriate siting of the available facilities. These options are discussed in more detail for each project scope element under the 'Project Scope of Works' section of this Statement of Evidence.

Historical Background

27. Garden Island is located on the southern foreshore of Sydney Harbour and has supported naval activities since 1788. In 1859 it became a dry docking and general maintenance facility and in 1883 it became the headquarters for the Royal Navy in Australia (prior to the official creation of the RAN). Today, Garden Island is a strategically vital and enduring Defence base. Its primary role is to support and maintain the ten major RAN ships based in Sydney, plus visiting RAN and foreign warships. The Garden Island complex provides a vital range of fleet base facilities that are fundamental to mounting and supporting maritime operational capability.
28. Randwick Barracks has been used for military training since the early 1860s. The site has also been used as a Naval Stores Depot and Army Transportation Squadron facility. Today, Randwick Barracks is home to several major Army units, has well established base support facilities and provides transit and training accommodation for some 250 personnel.

Environment and Heritage Assessment Process

29. A combined Environment and Heritage Impact Assessment was prepared in June 2011 to determine the impact of the proposed works at Garden Island and Randwick Barracks.

Heritage Impact

30. The Environment and Heritage Impact Assessment concluded that there will be no significant impacts on historical, indigenous, archaeological or heritage values at the proposed sites.
31. With respect to Garden Island, the impact assessment determined that the proposed ships' operations would involve no significant adverse physical impacts on Garden Island or on significant heritage items in this location. The impact assessment also noted that what impacts there would be on the setting of Garden Island would be limited to the western and southern precincts of Garden Island where the tolerance for change is higher and the berthing of the LHDs would be consistent with the robust industrial character of these precincts. In addition, it was determined that the introduction of the LHDs would be part of the continuing and evolving function of Garden Island as a Naval Base and that this would support one of the

primary values of Garden Island as contributing to an 'enduring and evolving Naval heritage' by its continuing association with RAN facilities.

32. Any potential impacts on the 'Hammerhead Crane' (a redundant asset at Garden Island possessing some heritage values) have been avoided by the careful planning of LHD berthing locations, noting though that safety concerns given the crane's location have significantly constrained the berthing options for the LHDs. As such, the Hammerhead Crane's continued presence at Garden Island following the 2014 introduction into service of the new LHD capability (and the subsequent 2016 introduction of the new AWD capability) will impose significant restrictions on the RAN's berthing capacity and flexibility at Garden Island. Defence has therefore lodged a separate submission with the Department of Sustainability, Environment, Water, Population and Communities, under the provisions of the *Environment Protection and Biodiversity Conservation Act (EPBC Act) 1999* (Cth), seeking approval for the removal of the Hammerhead Crane before the arrival of the first LHD in early 2014.
33. Defence's Directorate of Environmental Protection and Assessments has considered the proposed works in relation to the Heritage Management Plan and the EPBC Act and has advised that a referral will not be required under the Act for the proposed scope.

Environmental Impact

34. The Environment and Heritage Impact Assessment prepared in June 2011 advised of the potential impact of the new works on visual amenity, traffic management, soil contamination, noise, water quality, waste management, air quality, flora and fauna. The Assessment concluded that minimal impact would occur as a result of the proposed works and a referral will not be required under the EPBC Act.
35. The proposed works will be managed in accordance with the Defence Environmental Management framework. Environmental procedures for all proposed construction activities will be required to comply with an approved Construction Environmental Management Plan, from which a Defence Environmental Clearance Certificate will be issued prior to commencing any construction activities.

Key Legislation

36. The following key legislation is relevant to this project:
- a. *Environment Protection and Biodiversity Conservation Act 1999* (Cth);
 - b. *Building and Construction Industry Improvement Act 2005* (Cth);
 - c. *Work Health and Safety Act (WH&S) 2011* (Cth);
 - d. *Disability Discrimination Act 1992* (Cth); and
 - e. *Fair Work Act 2009* (Cth).
37. The design will comply with all relevant and current Defence Standards, Australian Standards, Codes and Guidelines including, but not limited to, the following:
- a. National Construction Code, 2011;
 - b. Defence Manual of Fire Protection Engineering; and
 - c. Defence Estate Quality Management System (DEQMS).

Impacts on Local Communities

38. Defence has remained cognisant of potential impacts on local communities in developing the designs for the proposed works. Considerations included the Sydney Opera House Buffer Zone, and impacts on residents and traffic adjacent to the Garden Island and Randwick Barracks sites. Further details with respect to the impacts on residents and traffic, and where required the mitigation measures, are discussed under the 'Local Road and Traffic Concerns' section of this Statement of Evidence.
39. Due to the physical size of the LHDs and the associated operational and maintenance activities of the two new ships while berthed at Garden Island, visual and noise impact assessments were undertaken, details of which are as follows:
- a. A Visual Impact Assessment and Shadow Study was undertaken to address the potential impacts of the LHDs when berthed at Garden Island. It was determined that the only shadow cast of significance with regard to publicly accessible space is the 3:00 pm shadow cast during the Winter Solstice (on or about June 21 each year). At this time, shadows encroach on a small part of the Cowper Wharf Road and footpath, and some relatively minor shadow from the ship funnel and communications towers also cast onto the sandstone bluff and heritage property on the corner of Cowper

Road and Wylde Street. This level of overshadowing is not considered to be significant, particularly as the footpath area to the south of the LHD berths is open to the sun. On the basis of these findings, the Visual Impact Assessment and Shadow Study determined that the impact of overshadowing by berthed LHDs is considered negligible.

- b. A Noise Impact Assessment was also undertaken for the proposed operations of the LHDs at Garden Island to predict the noise impacts on community areas located in the Potts Point and Woolloomooloo areas. The Noise Impact Assessment concluded that for the worst case of night-time operating conditions during a short-term stay, unacceptable levels of noise would occur at a number of residential sites. To lessen this impact, well established practices to manage noise resulting from current activities at Fleet Base East will be applied to the operation of the LHDs while berthed at Garden Island.

40. Details with respect to the positive economic impacts within the Sydney region are discussed under the 'Public Value' section of this Statement of Evidence.

Consultation with Stakeholders

41. Consultation has occurred, or will occur, with the list of stakeholders as detailed at Attachment 3.

Purpose of Works

Project Objectives

42. The purpose of the project is to provide ship sustainment facilities within the Sydney region for the ongoing training, systems through life support and maintenance, and berthing of the new *Canberra* Class LHDs. Key objectives are to:
 - a. achieve greater efficiency and increased flexibility in the provision of shore side support for the new LHD capability through the sustainment phase;
 - b. meet the Commonwealth's obligations for the provision of Government Furnished Facilities; and

- c. provide modern, fit for purpose, high quality, safe and energy efficient facilities that meet these needs.

Site Selection

43. The site selection for each project element has been undertaken in accordance with Infrastructure Division's planning policy requirements as set out in the DEQMS. A Site Selection Board was conducted in May 2011, which considered Defence policy regarding environment, heritage and operational requirements, and where available, existing planning guidance under the relevant Zone and / or Master Plan for each site.

Project Locations

44. The proposed works will be undertaken at the following Commonwealth owned and Defence controlled establishments within Sydney, New South Wales:
 - a. Garden Island, which is located approximately two kilometres east of the City of Sydney; and
 - b. Randwick Barracks, which is located approximately twelve kilometres south of the City of Sydney.
45. The proposed site plans for Garden Island and Randwick Barracks are at Attachments 4 and 5 respectively.

Project Scope of Works

46. To meet the project objective of 'achieving greater efficiency and increased flexibility in the provision of shore side support for the new LHD capability through the sustainment phase', Defence has taken the initiative to develop the LHD and AWD ship sustainment facilities projects together to produce a holistic solution that maximises the benefits of operating both capabilities from Sydney.¹³
47. The provision of the proposed LHD ship sustainment facilities shares similar risks in development and delivery to that of the proposed AWD ship sustainment facilities. To

coordinate the mitigation of these risks, Defence has investigated opportunities for synergies between the sustainment, logistic support and other training requirements that may be either shared or collocated to produce a value for money outcome for the Commonwealth.

48. To meet all project objectives for the ongoing sustainment, training, maintenance and support of the LHD capability, there are five proposed project scope elements, which are as described below.

Project Scope Element 1 – LHD Training Centre at Randwick Barracks

49. Existing training spaces available at Garden Island in the Combat System Maintenance School and the Navy Technical Training Unit – East are fully allocated to training crews of the existing classes of ships. Redevelopment of the existing training spaces at Garden Island was considered but rejected because of the costs to decant and relocate training spaces in leased premises off the Defence estate while new training spaces were being constructed. Rebuilding new training spaces on Garden Island is also incompatible with the Garden Island Defence Precinct Strategic Accommodation Management Plan. The Strategic Accommodation Management Plan aims, in the long-term, to relocate all training facilities from Garden Island to other locations, including both Randwick Barracks and HMAS *Watson*, in order to optimise the effectiveness and efficiency of Garden Island as a dedicated operational and maintenance support base.
50. The proposed LHD Training Centre aims to provide ship class specific training on both the ship's combat systems and the platform systems. This training will build upon category training conducted at other RAN training establishments. The proposed Training Centre will be located at Randwick Barracks and will provide three types of training spaces: computer learning classrooms of varying sizes; specialist teaching spaces using part task training simulators and emulators; and equipment based training areas requiring specialist power and mechanical plant. The proposed Training Centre will also include instructor office spaces, resource rooms and meeting rooms; general amenity areas for a library, break out,

¹³ The AWD Ship Sustainment Facilities project has been separately referred to the Parliamentary Standing Committee on Public Works.

kitchenettes, and ablutions; office areas for staff to manage the training centre and its systems; and ancillary spaces for server rooms, a reception area and building services.

51. The proposed LHD Training Centre at Randwick Barracks is a new two-storey purpose built building of approximately 3,500 square metres constructed on a 'brown field' site adjacent to the proposed AWD Training Centre. An existing building, Building 302, will be demolished as part of these works. A new carpark adjacent to the proposed Training Centre and combined with the proposed AWD Training Centre carpark is also proposed to be provided. Plans of the proposed works are shown at Attachments 6 to 9.

Project Scope Element 2 – LHD Through Life Support Facility at Garden Island

52. The LHD requires an on-shore environment in which the software associated with the combat and platform systems of the ship are maintained. The Through Life Support Facility primarily houses computer laboratories in which changes and updates to the combat and platform systems are tested prior to loading onto the ship. The facility also needs to provide an office environment for staff engaged in maintenance and testing activities.
53. The proposed new Through Life Support Facility will be located at Garden Island in part of a new three-storey building of approximately 5,600 square metres, built adjacent to the Captain Cook Graving Dock, on the existing site of Building 314, which will be demolished as part of the works. This new office complex includes the LHD Systems Program Office (see Project Scope Element 3) plus the proposed AWD Through Life Support Facility and Systems Program Office,¹⁴ to maximise the efficiencies and synergies of these functional areas.
54. Re-use of the existing Building 314 at Garden Island, an asset currently occupied by Thales under licence with Defence until 30 June 2013, was considered for this facility. Defence made an assessment of Building 314 based on known factors that included the dilapidation, structural inadequacy, the dysfunctional layout of the building and the need for building compliance upgrades to meet the Defence Manual of Fire Protection Engineering and green building initiatives. Defence subsequently concluded that construction of new purpose-designed facilities would provide a more cost effective whole of life outcome.

¹⁴ Funded separately under the AWD Ship Sustainment Facilities project.

55. The functional spaces required for the proposed Through Life Support Facility include computer laboratories, workshops and storage areas; office areas, resource rooms and meeting rooms; general amenity areas for break out spaces, kitchenettes, and ablutions; and ancillary spaces for server rooms, a reception area, and building services. Plans of the proposed Through Life Support Facility section of the new building are shown at Attachments 10 to 14.

Project Scope Element 3 – LHD System Program Office at Garden Island

56. The LHD Systems Program Office requires an office based work area with a requirement for secure tender suites to allow the evaluation of maintenance tenders let at various times through the life-of-type of the ship.
57. As identified earlier, the new Systems Program Office is proposed to be located on Garden Island in part of the new three-storey building to be constructed on the site of the existing Building 314, which will be demolished as part of the works. This will allow for collocation of the proposed LHD Through Life Support Facility and Systems Program Office with the proposed AWD Through Life Support Facility and Systems Program Office,¹⁵ with associated gains in operating effectiveness and spatial efficiency.
58. The functional spaces required for the proposed Systems Program Office include staff office areas, tender suites, meeting rooms and a training room; general amenity areas for break out spaces, kitchenettes, and ablutions; and ancillary spaces for a library, archives storage, general storage, server rooms, a reception area, and building services. Plans of the proposed Systems Program Office section of the new works are shown at Attachments 10 to 14.

Project Scope Element 4 – LHD Integrated Platform Monitoring System Remote Monitoring Station at Garden Island

59. Each LHD has the requirement for monitoring remotely the performance of the Integrated Platform Management System via a laptop computer electronically (and physically) connected to the ship's system. There is a requirement to provide a location ashore, proximate to the ship's berth, with the capacity for duty personnel from each ship to operate their vessel's Remote Monitoring System. Re-use of vacant space in Building 122 at Garden Island,

an asset currently occupied by RAN Port Services Manager - East, was considered and is proposed to be adopted as a cost effective solution for this function.

60. The proposed Integrated Platform Monitoring System Remote Monitoring Station requires a partial fitout at the first floor level within the southern end of Building 122. The AWDs have a similar requirement and Defence proposes to collocate both requirements within the same space as shown on the plans at Attachment 15.¹⁶

Project Scope Element 5 – LHD Berthing Infrastructure at Garden Island

61. A majority of the existing berthing infrastructure at Garden Island is suitable for the new LHDs to allow connection to shore supplied engineering services (for electric power, water supply, sewerage disposal and compressed air). However, the existing connections for ship to shore communications are incompatible and require upgrading to the systems specifications of the LHD. This is particularly important to support communications between the LHDs and the proposed Integrated Platform Monitoring System (Project Scope Element 4). If this work is not conducted, the LHD will be able to berth but will be unable to communicate directly to the shore.
62. The proposed berthing infrastructure will install new cope points at berthing positions Fleet Base East 1, 2, and 3 for communications to support the proposed Integrated Platform Monitoring System. Plans of the proposed works are shown at Attachment 16.
63. Also critical to any berthing operation conducted at Fleet Base East is ensuring that the integrity of the wharf and the ship is preserved throughout the operation. During the final stages of berthing a LHD, that is when the LHD is ‘abeam the berth’¹⁷, the LHD will be manoeuvred sideways to the berth at a very slow speed using either the ship’s inherent azipod propulsion system,¹⁸ bow thrusters, tugs, or a combination of all. To further assist in the safe berthing of a LHD, a number of fenders, positioned between the LHD and the berth, are also

¹⁵ Funded separately under the AWD Ship Sustainment Facilities project.

¹⁶ Funded separately under the AWD Ship Sustainment Facilities project.

¹⁷ When the ship is parallel to its allocated berth.

¹⁸ ‘Azipod’ is a registered brand name for an ‘azimuth thruster’, which is a configuration of propellers placed in pods that can be rotated in any horizontal direction thereby giving a ship better manoeuvrability as compared to a fixed propeller and rudder system.

required. The use of fenders in berthing a LHD will ensure that any force generated by the LHD's residual momentum in combination with other less controlled forces such as wind and tide, is spread evenly across the entire ship's side and across the maximum fendered face of the wharf.

64. The RAN Port Services at Garden Island currently have a total of twelve Trelleborg 'SeaCamels', which provide fendering to vessels when berthing at Garden Island, and a number of 'Yokohama Pneumatic Fenders' for miscellaneous fendering purposes.
65. During the development phase of the LHD Ship Sustainment Facilities project, a number of options were considered for the reuse and / or modification of the existing fendering systems to allow the LHDs to berth safely at Fleet Base East 1, 2 and 3 berthing positions. However, all options considered so far have proven to be unsuitable in ensuring the level of safety required. Further investigations into a suitable fendering system, combined with a reconsideration of the current 'bollard'¹⁹ system, at Fleet Base East 1, 2 and 3 berthing positions are ongoing and will be finalised by mid 2013.

Public Transport

66. Garden Island is well served with bus stops at the Base entry on Cowper Wharf Road and Kings Cross railway station is located approximately 1.25 kilometres away. A travel pattern survey undertaken for Garden Island found that approximately 25% of commuters travelled via public transport and 62% travelled by private car.
67. At Randwick Barracks, the nearest bus routes travel along Rainbow Street to the north of the Barracks. Anzac Parade, which connects to Avoca Street, also has a high frequency of buses as it is a major public transport corridor. There is a relatively high dependency on private motor vehicles by Defence personnel commuting to and from Randwick Barracks.

¹⁹ In this context, a bollard is a short iron post anchored to a wharf, to which vessels can be secured by heavy berthing lines.

Local Road and Traffic Concerns

68. There will be a net increase in personnel accessing Garden Island and Randwick Barracks following the introduction of the new LHD capability. The net increase in personnel per working day accessing Garden Island is approximately 150 and approximately 50 for Randwick Barracks.
69. A Traffic Impact Assessment was conducted in June 2011 that covered both the construction period and the net increase in base population following completion.
70. The report concluded that at Garden Island, the proposed demolition of Building 314 and construction of the proposed combined LHD and AWD Through Life Support Facilities and Systems Program Offices would generate a maximum of 45 trucks per day. There is potential to impact the intersection of Cowper Wharf Road and Wylde Street due to trucks queuing back from the site barrier access along Cowper Wharf Road. However, the lane allocation on Cowper Wharf Road means that vehicles would be able to queue in the left hand lane of Cowper Wharf Road when accessing the site through the main gate. This would reduce the impact to right turning vehicles at the intersection onto Wylde Street as they have their own dedicated lane, which is over 500 metres long. As the site is well connected to public transport, current travel patterns and sustainable travel options are expected to continue with minimal impact.
71. At Randwick Barracks, construction of the proposed combined Training Centres it is anticipated to generate a maximum of 55 trucks per day. This is not considered likely to have a significant impact on the local road network. Vehicle parking generated by occupants of the proposed LHD Training Centre will be accommodated in a purpose built car park of 68 spaces. The majority of vehicles accessing the LHD Training Centre will be intra-Barracks traffic, where a number of trainees may choose to drive from their living-in accommodation to the Training Centre. Overall, the combined AWD and LHD Training Centres will have a negligible impact on Avoca Street traffic and minimal impact on traffic in surrounding streets.
72. To alleviate the impact of extra traffic at each establishment, Construction Traffic Management Plans and Green Travel Plans will be prepared and implemented. Heavy machinery used during construction is also expected to have minimal impact on the local road network as such machinery is expected to remain on site for prolonged periods of time.

Zoning, Local Approvals and Land Acquisition

73. The proposed works are contained wholly within Commonwealth owned and Defence controlled land.
74. Each of the project elements at Garden Island is to be constructed on sites consistent with the current Zone and Precinct Plan. Site planning of the Training Centre at Randwick Barracks is consistent with the Randwick Barracks Preliminary Zone Plan.
75. Some works at Garden Island are proposed to be undertaken on buildings currently occupied by Thales under licence from Defence. However, these works are not scheduled to commence until after the expiration of that Thales licence on 30 June 2013.
76. The proposed works do not require acquisition of additional land or involve land disposal aspects. There will be no change to existing land use conditions at each site.

Planning and Design Concepts

77. The general philosophy adopted for the design of the proposed facilities incorporates the following considerations:
 - a. provision of cost effective and functional facilities of energy efficient design suitable for the climate of the site and of a style compatible with the existing base aesthetics;
 - b. adoption where possible of conventional construction techniques and materials, in particular those commonly used by the construction industry and consistent with those already utilised on the base;
 - c. maximum use of existing infrastructure and facilities to minimise capital costs;
 - d. utilisation of readily available and durable materials that combine long life while minimising maintenance;
 - e. recognition of site constraints, security requirements, the established zone plans, functional relationships to existing facilities and operational determinants; and
 - f. planning services and structure design to accommodate flexibility.

Structural Design

78. Structural design will take into account the local geotechnical profile and the marine environmental conditions encountered on Sydney Harbour and at Randwick Barracks. The

proposed new facilities will be reinforced concrete framed structures with post-tensioned upper level floor slabs and a post-tensioned concrete waterproofed roof appropriate to the environment. Internal walls are non-load bearing frames, lined with plasterboard to provide maximum flexibility in future layout.

Materials and Furnishings

79. External walls for new buildings will be a mixture of concrete panels and metal cladding with curtain wall glazing. A metal louvre sun screening system will be installed to improve environmental performance of the buildings. Where required, pre-finished steel roofing and rainwater fittings have also been selected for their resilience to the marine environment.

Mechanical Services

80. The mechanical services for each new building have been designed according to the function and needs of each building. The purpose of the mechanical service systems is to provide mandatory ventilation, thermal comfort and air quality facilities in accordance with specific user needs and the requirements of the National Construction Code.

Hydraulic Services

81. Existing natural gas, sewerage and storm water services are proposed to be extended to each facility to suit design requirements. Potable water will be connected to the existing supply via sub-metering to each new building. Roof water will be collected and stored in above ground storage tanks and plumbed for use in toilet flushing and landscape irrigation.

Electrical Services and Fire Protection

82. Lighting, power and lightning protection will be provided in accordance with Australian Standards and Defence's engineering requirements.
83. Electrical infrastructure and switchboards will have spare capacity to allow for future growth. Sub-metering will be included to each re-used and new building. The meters will be monitored through a new Building Management System, which will support an active energy management program on the site.

84. Fire and Rescue New South Wales have been consulted and fire detection systems, indication panels, emergency and exit lighting are proposed to be provided to suit the existing site systems. All construction and fire protection will comply with the National Construction Code, the Defence Manual of Fire Protection Engineering, and all other applicable Codes and Australian Standards.

Acoustics

85. The new facilities will comply with the National Construction Code and Australian Standards for noise and acoustics. Acoustic separation has been considered between rooms, and walls are being designed to meet user requirements and building functions.

Landscaping

86. Proposed new landscape works will complement and enhance the character of each site. The landscape design will focus on a functional, low maintenance, water sensitive approach with the use of indigenous plants. Precautions will be taken to avoid compromising environmental sensitivities by adopting landscaping practices in accordance with local environmental conditions and the Construction Environmental Management Plan.

Water and Energy Conservation Measures

87. The Commonwealth is committed to ecologically sustainable development and the reduction of greenhouse gas emissions. Defence reports annually to Parliament on its energy management performance and on its progress in meeting the energy efficiency targets established by the government as part of its commitment to improve ecologically sustainable development. Defence also implements policies and strategies in energy, water and waste to improve natural resource efficiency and to support its commitment to the reduction of energy consumption, potable water consumption and waste diversion to landfill. This project has addressed this policy by adopting cost-effective and ecologically sustainable development as a key objective in the design development and delivery of new facilities.
88. The ecologically sustainable measures for the project are balanced with other requirements for Defence buildings, including security, heritage and occupation health and safety considerations, to ensure that Defence's operational capability is not compromised.

89. All new offices and offices subject to major refurbishment that are greater than 2,000 square metres in floor area are required to comply with the minimum energy performance standards in the Energy Efficiency in Government Operations (EEGO) policy. Proposed buildings that are required to comply are:
- a. the LHD Training Centre at Randwick Barracks; and
 - b. the combined LHD Through Life Support Facility and Systems Program Office at Garden Island.
90. All other proposed buildings will be designed, constructed, operated and maintained to ensure that they use energy efficiently and comply with:
- a. Part 1.2 Section J of Volume One of the National Construction Code, 2011;
 - b. Part 3.12 Section J of Volume Two of the National Construction Code, 2011;
 - c. Defence Green Building Requirements; and
 - d. The EEGO policy.
91. Although not specifically identified by legislation, enhanced environmental outcomes will be achieved for all other habitable buildings through the use of Green Building Requirements to guide design.
92. Ecologically sustainable development objectives and solutions are considered in the design to reduce the impact on the wider environment by the use of sustainable design and construction techniques and management systems that will reduce energy consumption and the use of natural resources by:
- a. reusing existing buildings where possible, in preference to new builds, where reuse of the building meets user requirements;
 - b. demand mitigation and management by means of passive design solutions, energy efficient heating, ventilation and air-conditioning, lighting, water efficient fittings and fixtures, recycling and reuse of water, energy and water management, and material selection and minimisation;
 - c. providing high levels of user amenity and indoor environment by means of passive solar design, active design solutions such as high performance lighting design, operational initiatives for users including operational waste management and cycle racks, and green landscaping spaces to increase user amenity;

- d. examining alternative technologies to provide heating, cooling and lighting to reduce the environmental footprint of the site;
 - e. examining alternative solutions to reduce water supply to the site;
 - f. examining alternative modes of transport, particularly for internal site transportation; and
 - g. complying with 'Ecological Sustainable Design Targets' and 'Essential Requirements' as outlined in the Defence Green Building Requirement Document and other ecological sustainable design requirements specific to the project (including energy, water, waste and Green Star rating targets).
93. In addition to the above initiatives other features of the Defence Essential Requirements for Ecologically Sustainable Design incorporated into the proposed new facilities are:
- a. appliances and office equipment to be United States of America EPA 'Energy Star' compliant;
 - b. maximum of 10 Watts per square metre or equivalent for lighting to office areas;
 - c. separate digital energy metering for tenanted areas, central services, and computer data centres;
 - d. sub-metering of energy sources linked to a Building Management System;
 - e. sub-metering in accordance with the Defence Energy Management Strategy, the requirements of the Commonwealth EEGO policy;
 - f. spaces with intermittent and variable occupancy separately zoned with presence detection control and/or carbon dioxide 2 demand control ventilation;
 - g. minimum energy efficiency ratings of 3.5 stars for dishwashers and 4 stars for refrigeration; and
 - h. water sources to be metered and linked to the Building Management System.

Demolition and Disposal of Existing Structures

94. Building 314 at Garden Island and Buildings 301 and 302 at Randwick Barracks are proposed to be demolished to facilitate the construction of new works. Demolished materials will be separated and recycled where possible. Demolition is proposed to be conducted in accordance with the requirements of the Defence Heritage Management Plan relevant to each site.

95. Following an analysis of the Defence Asbestos Register and the conduct of a Hazardous Substance Audit (conducted in accordance with AS 2601-2001 'The Demolition of Structures) an assessment has been made of the type, location and extent of hazardous materials present at the proposed demolition sites. The assessment has indicated that a low risk is posed to Defence employees, contractors, adjoining residents and the environment given the known presence of hazardous materials at each proposed demolition site.
96. To further mitigate this risk, the following actions will be taken prior to the proposed demolition and disposal of the existing structures:
 - a. Procedures for the safe removal, management and disposal of hazardous materials (including an unexpected finds protocol) will be developed in accordance with all applicable Codes of Practice and Guidance Notes and then documented within the Construction Environmental Management Plan.
 - b. The removal, management and disposal of hazardous materials will only be conducted by appropriately qualified and certified contractors.

Provisions for People with Disabilities

97. Access and facilities for the disabled will be provided where necessary in accordance with the National Construction Code, Australian Standard AS1428 and Defence's policy 'Disabled Access and Other Facilities for Disabled Persons'. Passenger elevators will be provided in the proposed Training Centre at Randwick Barracks and in the combined Through Life Support Facility and Systems Program Office at Garden Island.

Childcare Provisions

98. No additional childcare facilities are being provided under this project.

Work Health and Safety Measures

99. The facilities to be provided under this project will comply with Department of Defence Work Health and Safety policy, the *Work Health and Safety Act (WHS) 2011* (Cth), Work Health and Safety (Commonwealth Employment - National Standards) Regulations and the Defence Work Health and Safety manual.

100. In accordance with Section 35(4) of the *Building and Construction Industry Improvement Act 2005* (Cth), contractors will be required to hold work occupational 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. All construction sites will be appropriately secured to prevent access during the construction period. No special or unusual public safety risks have been identified.

Cost-Effectiveness and Public Value

Outline of Project Costs

101. The estimated cost of this project is \$60.3 million, excluding Goods and Services Tax, which includes all delivery costs inclusive of management and design fees, construction costs, information communication technology, furniture, fittings and equipment, contingencies, and an allowance for escalation.
102. An increase in the net operating costs is expected due to the construction of new and re-used facilities containing more technical and environmentally compliant equipment, upgraded infrastructure and engineering services.

Details of Project Delivery System

103. Subject to Parliamentary approval of the project, a Project Manager / Contract Administrator will be appointed by the Commonwealth to manage the proposed works and administer the contracts for construction. Also subject to Parliamentary approval of the project, a Managing Contractor will be appointed using the Defence form of Managing Contractor Contract to control the completion of design development, to procure trade packages, and manage the overall construction of the proposed works. The Managing Contractor will also provide the Commonwealth with professional engineering advice on buildability efficiencies and provide facilities fit for purpose with associated warranties. The Managing Contractor is also required to actively promote the engagement of small to medium enterprises in design and construction trade packages.

Construction Schedule

104. Subject to Parliamentary approval of the project, construction is expected to commence in mid 2013 and be completed by late 2015.

Public Value

105. The proposed works contributes significantly to Navy capability outputs by providing effective new and re-used facilities at Garden Island and Randwick Barracks to support the introduction of the LHD capability.

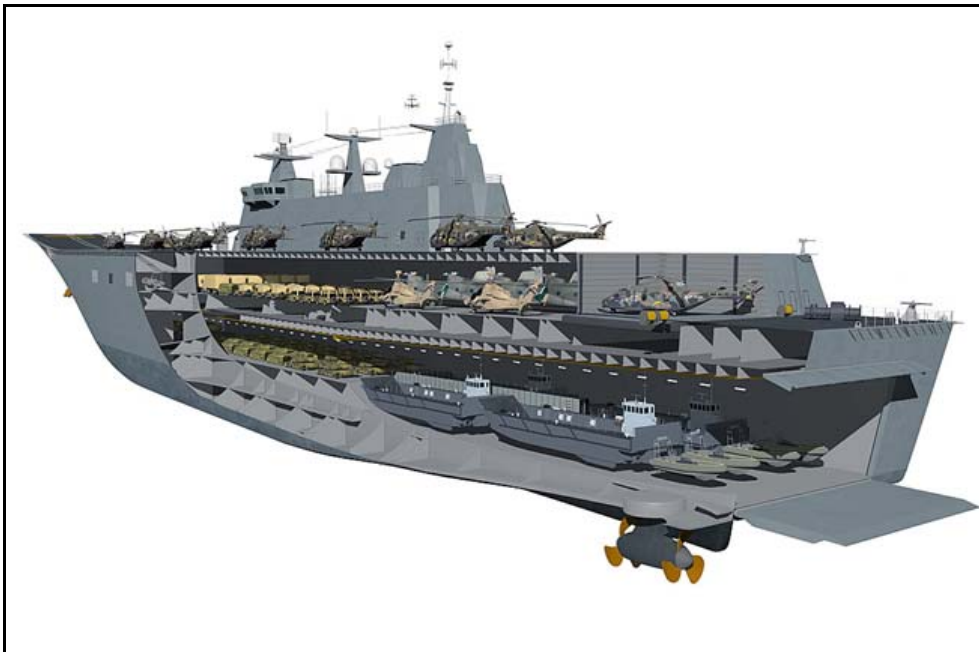
106. Existing facilities have been re-used where they viably meet the operational needs of the RAN and to minimise operating costs and environmental impacts. The cost of investment, both in capital and operating terms, has been optimised in a number of proposed purpose designed facilities. The proposed works includes the renewal of engineering services infrastructure to ensure these services will be adequate for at least the next 30 years.

107. The proposed project will have a positive economic impact on the Sydney region. The project will employ a diverse range of skilled consultants, contractors and construction workers over the construction period. It is estimated that the project will create the opportunity for approximately 360 full-time jobs over a period of 26 months, peaking at approximately 100 full time jobs. This will provide a positive impact for small and medium businesses in the Sydney region.

Revenue

108. No revenue will be derived from this proposal.

Characteristics of the *Canberra* Class Landing Helicopter Dock

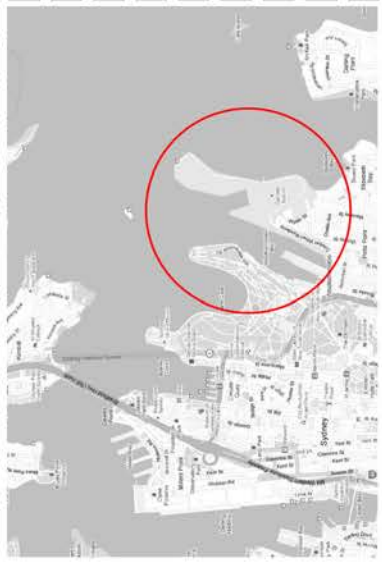
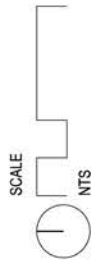


Characteristics:	Length: 230.8 metres
	Beam: 32 metres
	Draft: 7.1 metres (at full load)
	Full Load Displacement: 27,851 tonnes
Performance:	Top Speed: 20+ knots
	Range: 6,000 nautical miles at 20+ knots
Aviation / Flight Deck:	Configured with six spots on the port side for medium sized aircraft such as the Blackhawk, which allows for simultaneous take off and landing operations; alternatively the LHD can also support simultaneous take off and landing operations of four CH-47 Chinooks

Aviation / Hangar:	Can accommodate up to 8 medium sized helicopters with 18 medium sized helicopters able to be accommodated if the light vehicle deck is also used
Crew:	Approx 400
Embarked Force:	Approx 1000
Boats:	Four Landing Craft

Stakeholder List

- The Honourable Malcolm Turnbull MP, Federal Member for Wentworth
- The Honourable Peter Garrett MP, Federal Member for Kingsford Smith
- The Honourable Tanya Plibersek MP, Federal Member for Sydney
- Alex Greenwich MP, New South Wales State Member for Sydney
- Michael Daley MP, New South Wales State Member for Maroubra
- City of Sydney
- Randwick City Council
- Fire and Rescue New South Wales
- Sydney Water
- AusGrid
- Sydney Harbour Foreshore Authority
- New South Wales National Parks
- Community consultations in Sydney and Randwick
- Department of Climate Change and Energy Efficiency
- Department of Sustainability, Environment, Water, Population and Communities



GARDEN ISLAND

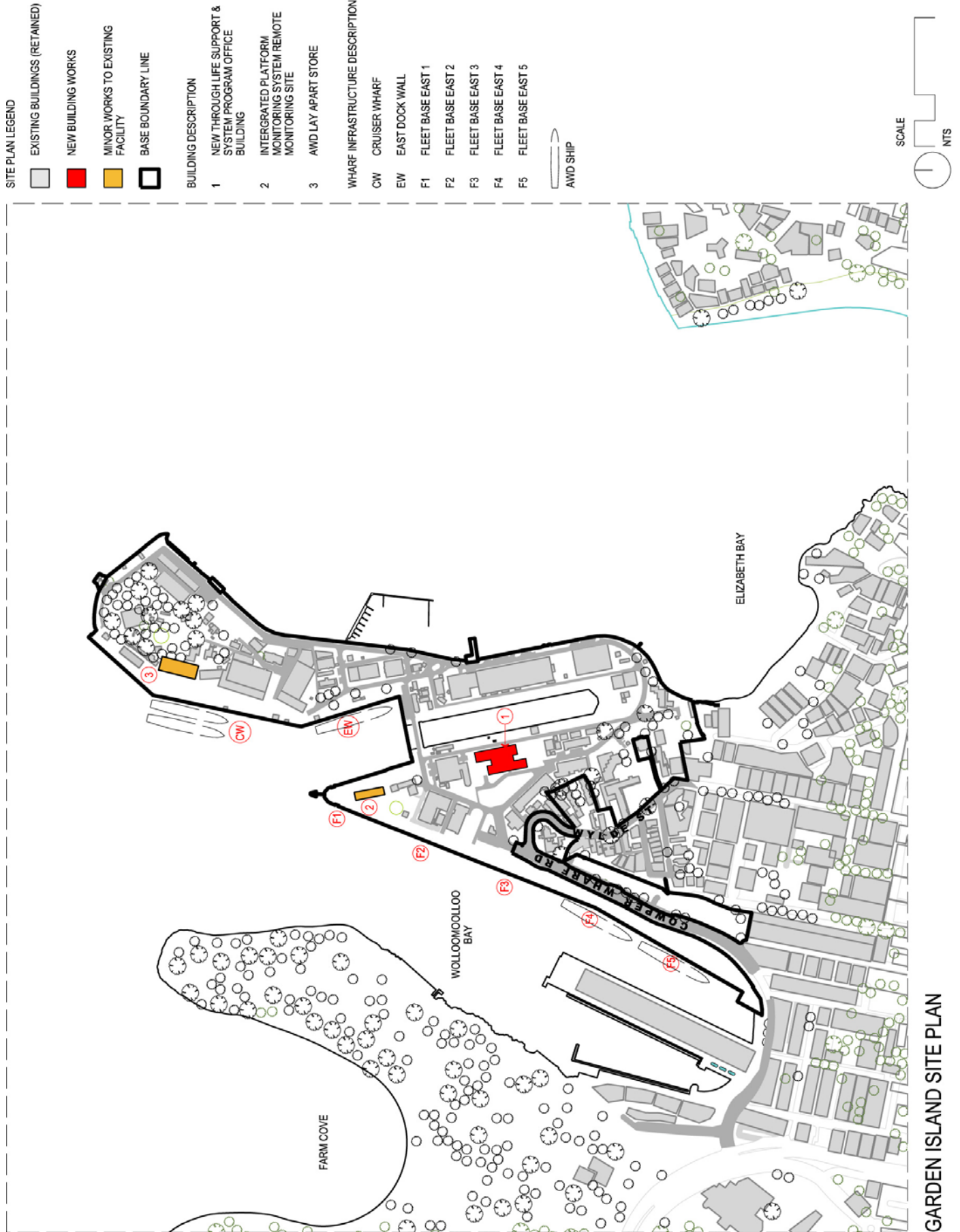


RANDWICK BARRACKS

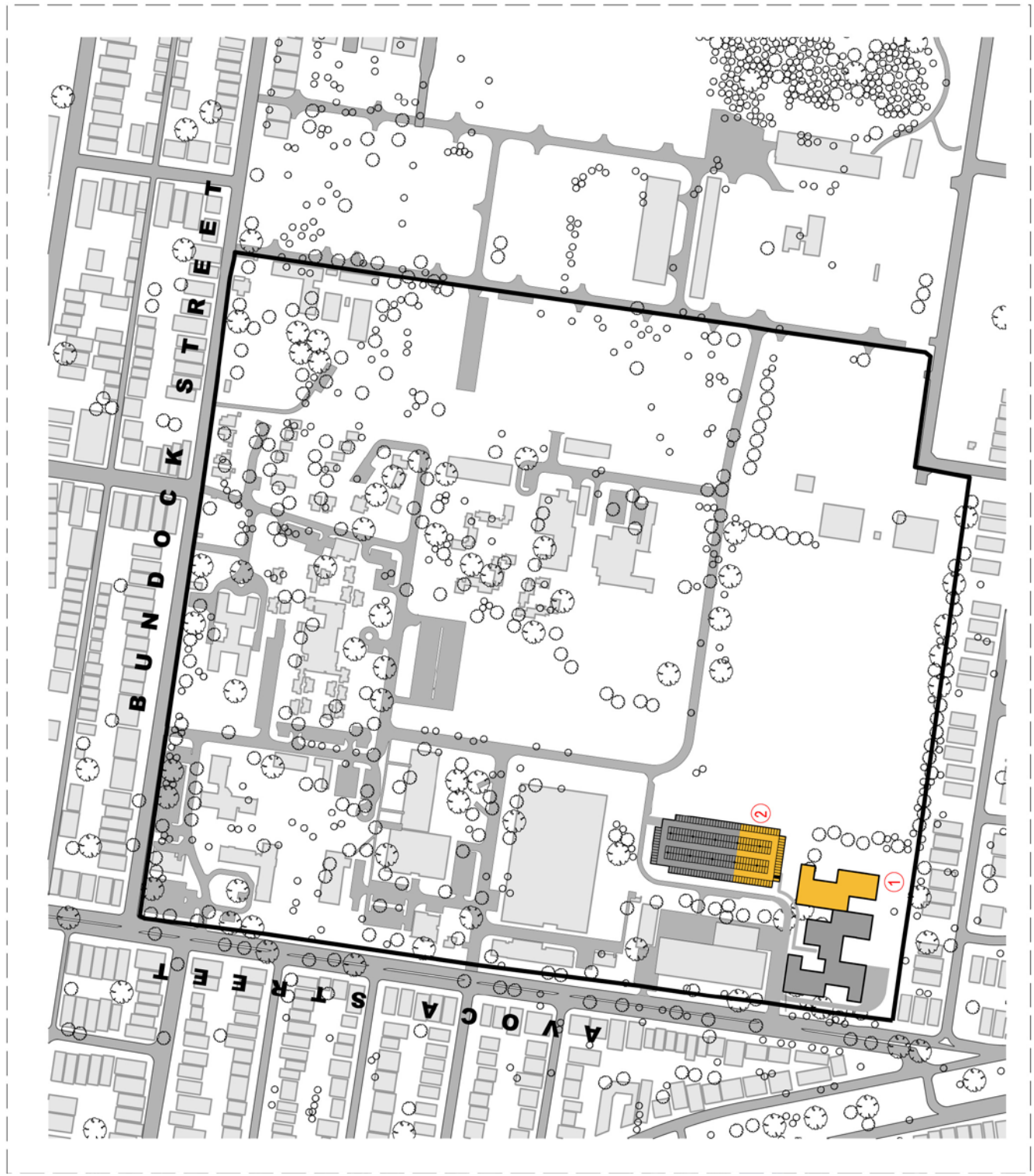
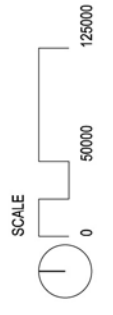


LOCATION PLAN, SYDNEY NSW

LOCATION PLAN



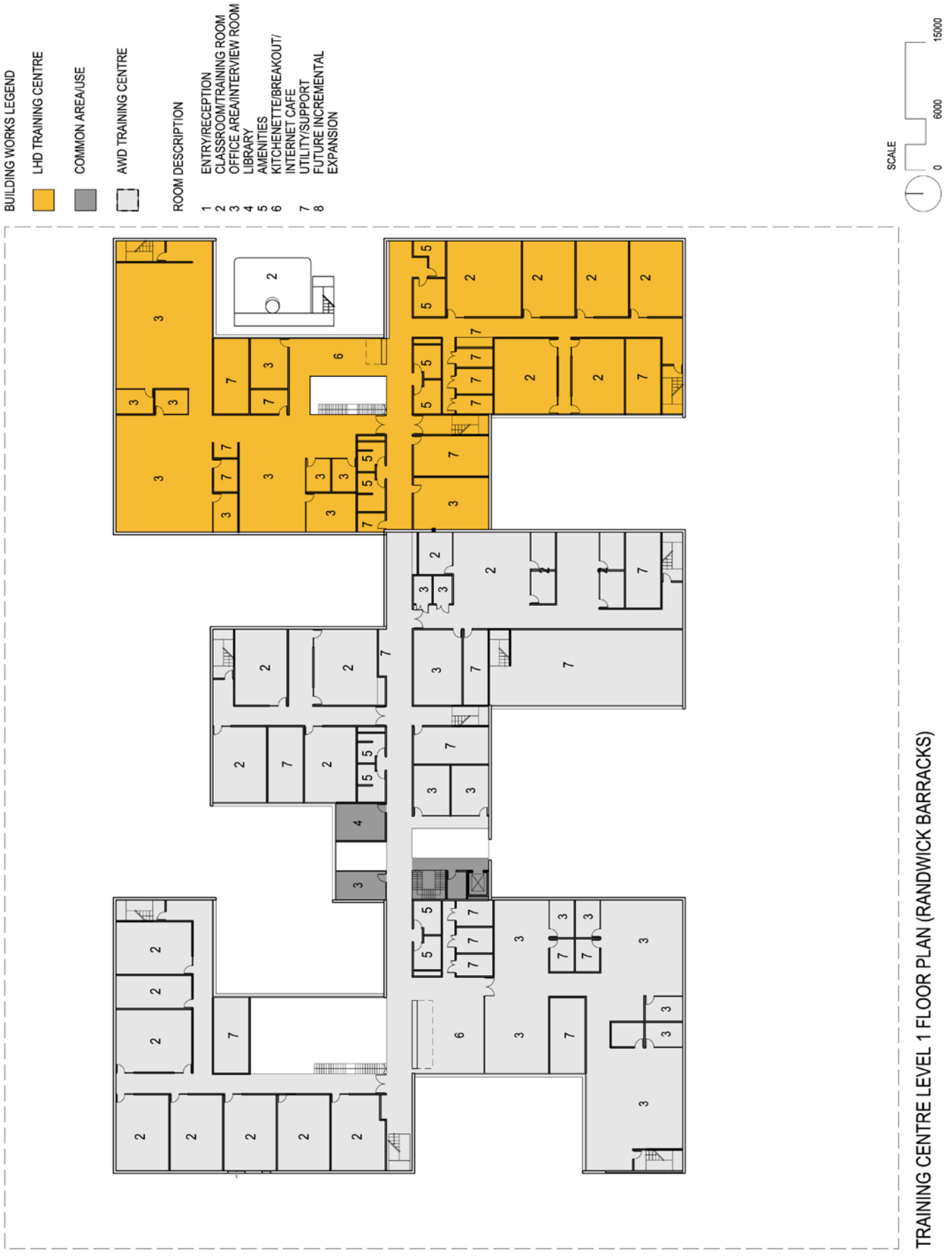
- SITE PLAN LEGEND**
- EXISTING BUILDINGS (RETAINED)
 - NEW LHD TRAINING CENTRE
 - NEW LHD CARPARK
 - AWD WORKS
 - BASE BOUNDARY LINE
- BUILDING DESCRIPTION**
- 1 NEW TRAINING CENTRE
 - 2 NEW CARPARK



RANDWICK BARRACKS SITE PLAN



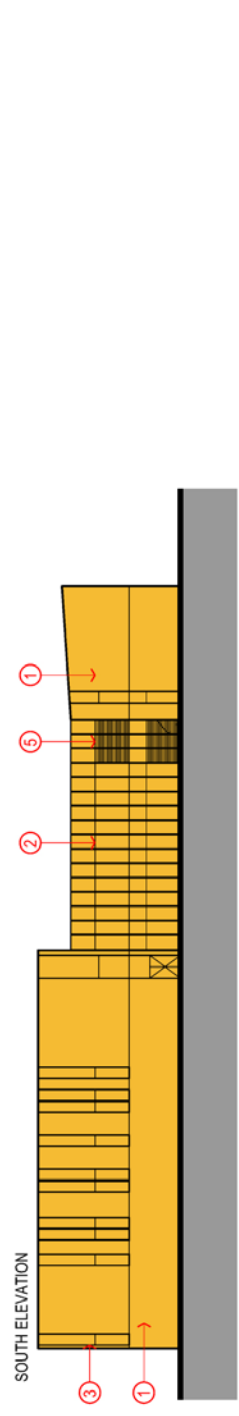
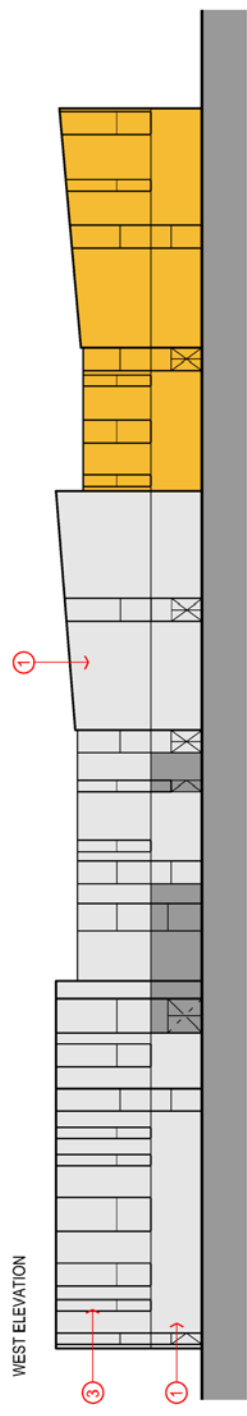
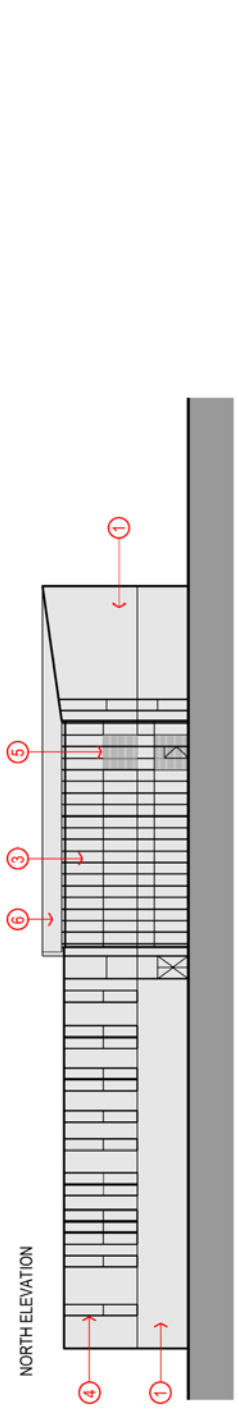
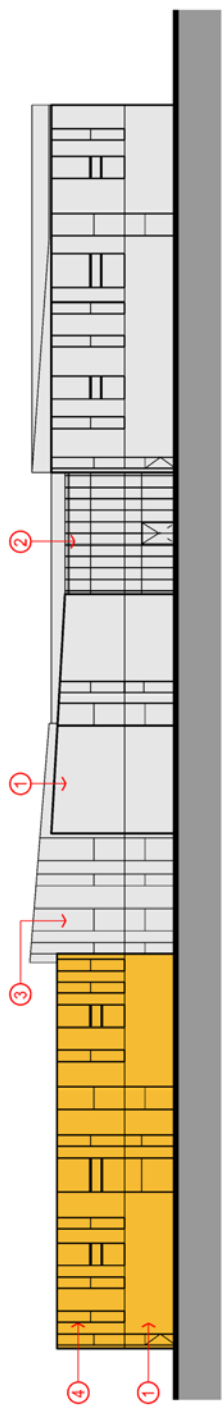
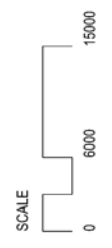
TRAINING CENTRE SITE PLAN/GROUND FLOOR PLAN (RANDWICK BARRACKS)



TRAINING CENTRE LEVEL 1 FLOOR PLAN (RANDWICK BARRACKS)

- EXTERNAL MATERIAL LEGEND**
- ① PRE CAST CONCRETE PANELS
 - ② GLAZED FACADE SYSTEM WITH SOLID SPANDRELS
 - ③ GLAZED FACADE SYSTEM
 - ④ GLAZED WINDOW SYSTEM
 - ⑤ ALUMINIUM LOURVE SYSTEM
 - ⑥ PREFINISHED METAL ROOF

- BUILDING WORKS LEGEND**
- LHD TRAINING CENTRE
 - COMMON AREA/USE
 - AWD COMPONENT



ATTACHMENT 07 TRAINING CENTRE ELEVATIONS (RANDWICK BARRACKS)

NOTE:
EXTERNAL COLOUR OF THE
FACILITY TO BLEND WITH
LANDSCAPE



TRAINING CENTRE PERSPECTIVE, VIEW FROM PROPOSED CAR PARK (RANDWICK BARRACKS)



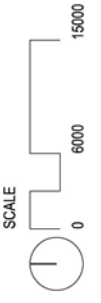
- BUILDING WORKS LEGEND**
- LHD THROUGH LIFE SUPPORT FACILITY
 - COMMON AREA/USE
 - AWD COMPONENT

- ROOM DESCRIPTION**
- 1 ENTRY/RECEPTION
 - 2 KITCHENETTE/BREAKOUT
 - 3 AMENITIES
 - 4 OPEN PLAN OFFICE AREA
 - 5 SINGLE OFFICE
 - 6 CONFERENCE/MEETING ROOMS
 - 7 COMPUTER ROOM
 - 8 UTILITY/SUPPORT

H I C K S R O A D

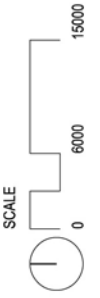


E X I S T I N G A C C E S S R O A D



THROUGH LIFE SUPPORT FACILITY & SYSTEM PROGRAM OFFICE, GROUND FLOOR PLAN (GARDEN ISLAND)

- BUILDING WORKS LEGEND**
- LHD SYSTEM PROGRAM OFFICE
 - COMMON AREA/USE
 - AWD COMPONENT
- ROOM DESCRIPTION**
- 1 ENTRY/RECEPTION
 - 2 KITCHENETTE/BREAKOUT
 - 3 AMENITIES
 - 4 OPEN PLAN OFFICE AREA
 - 5 SINGLE OFFICE
 - 6 CONFERENCE/MEETING ROOMS
 - 7 COMPUTER ROOM
 - 8 UTILITY/SUPPORT



THROUGH LIFE SUPPORT FACILITY & SYSTEM PROGRAM OFFICE, LEVEL 1 PLAN (GARDEN ISLAND)

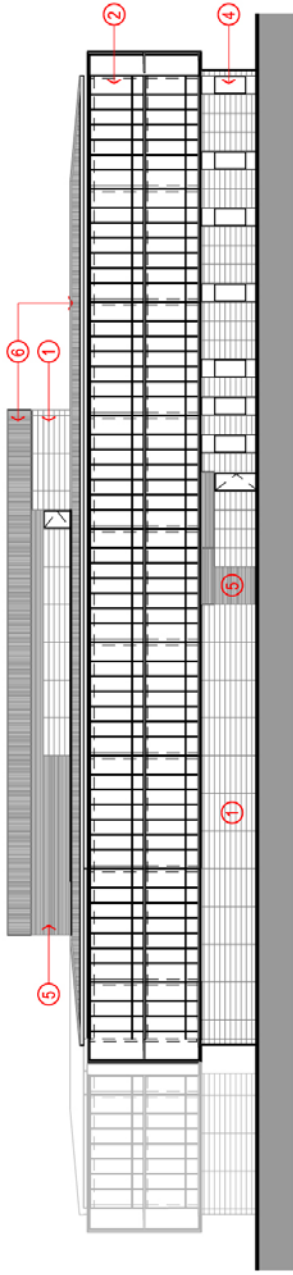
- BUILDING WORKS LEGEND**
- LHD SYSTEM PROGRAM OFFICE
 - COMMON AREA/USE
 - AWD COMPONENT
- ROOM DESCRIPTION**
- 1 ENTRY/RECEPTION
 - 2 KITCHENETTE/BREAKOUT
 - 3 AMENITIES
 - 4 OPEN PLAN OFFICE AREA
 - 5 SINGLE OFFICE
 - 6 CONFERENCE/MEETING ROOMS
 - 7 COMPUTER ROOM
 - 8 UTILITY/SUPPORT



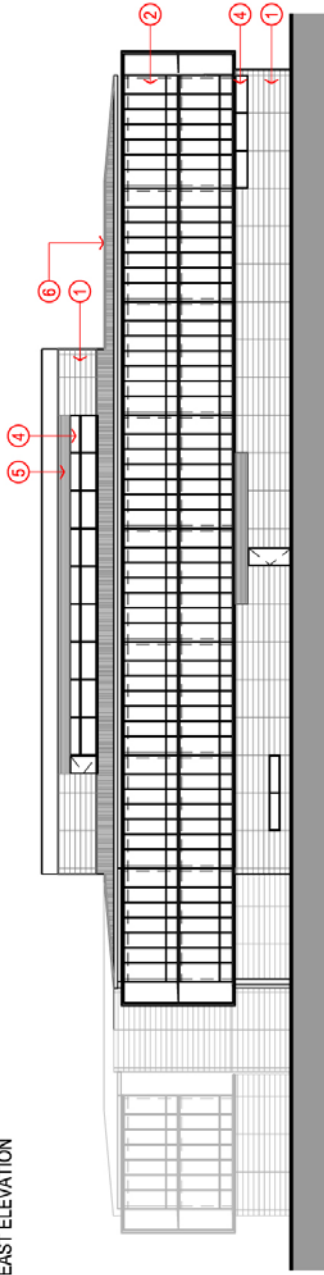
THROUGH LIFE SUPPORT FACILITY & SYSTEM PROGRAM OFFICE, LEVEL 2 PLAN (GARDEN ISLAND)

- EXTERNAL MATERIAL LEGEND**
- ① PRE CAST CONCRETE PANELS
 - ② GLAZED FACADE SYSTEM WITH SOLID SPANDRELS
 - ③ GLAZED FACADE SYSTEM
 - ④ GLAZED WINDOW SYSTEM
 - ⑤ ALUMINIUM LOUVRE SYSTEM
 - ⑥ PREFINISHED METAL ROOF

NOTE:
 EXTERNAL SUN SHADE DEVICES NOT SHOWN ON NORTH, EAST & WEST ELEVATIONS FOR CLARITY



EAST ELEVATION

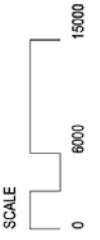


WEST ELEVATION



NORTH ELEVATION

SOUTH ELEVATION

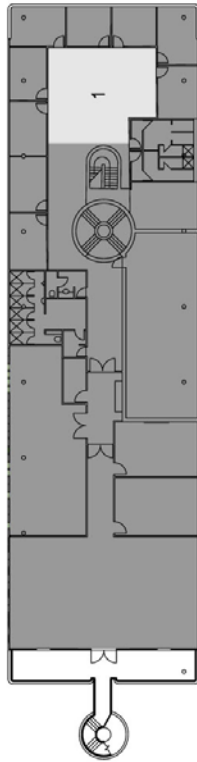


NOTE:
EXTERNAL COLOUR OF THE
FACILITY TO BLEND WITH
LANDSCAPE



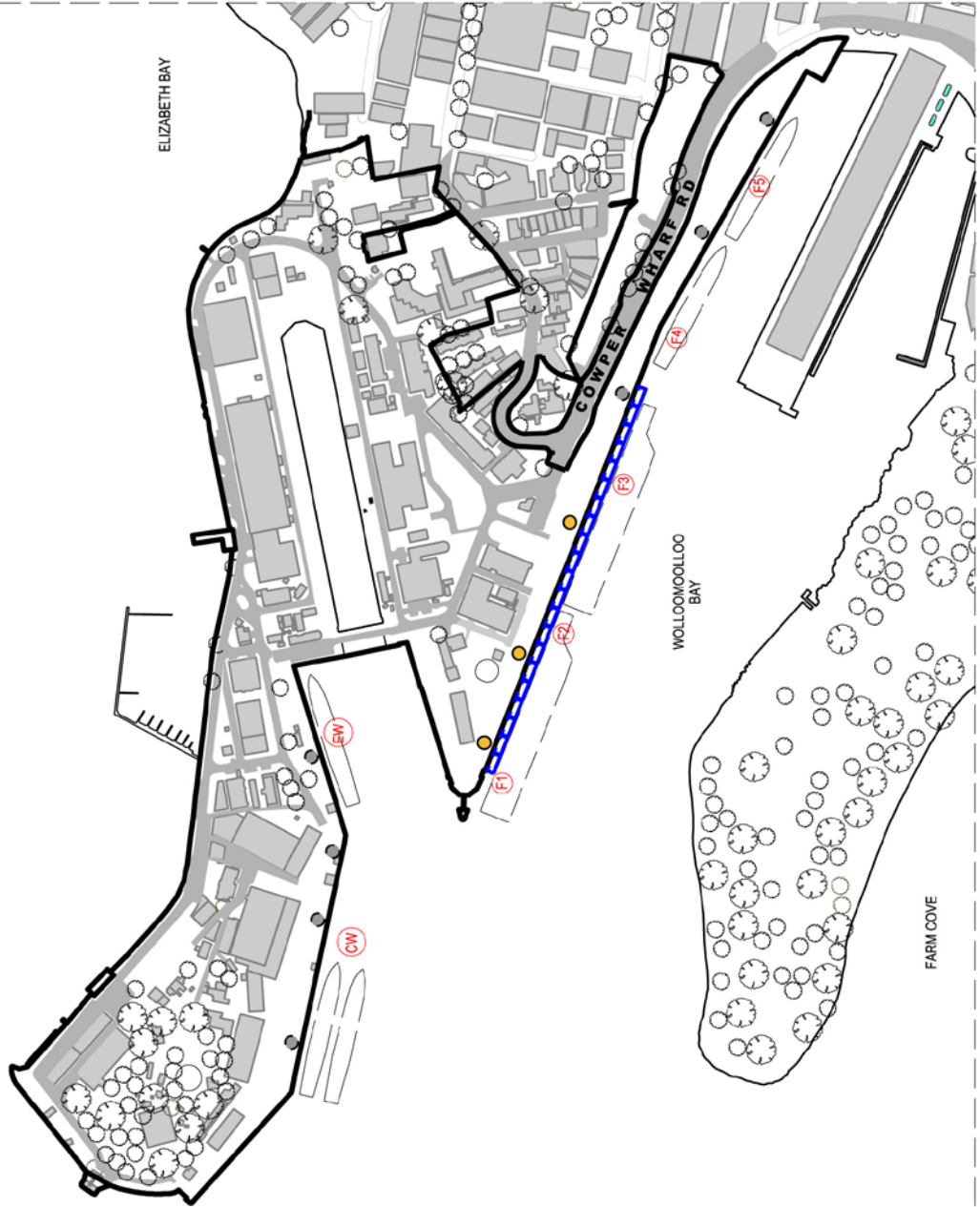
THROUGH LIFE SUPPORT FACILITY & SYSTEM PROGRAM OFFICE, PERSPECTIVE, VIEW FROM EXISTING RECREATIONAL AREA (GARDEN ISLAND)

- BUILDING WORKS LEGEND**
- NEW (MINOR) BUILDING WORKS
 - EXISTING FACILITY
- ROOM DESCRIPTION**
- 1 INTERGRATED PLATFORM MONITORING SYSTEM REMOTE MONITORING SITE



INTERGRATED PLATFORM MONITORING SYSTEM REMOTE MONITORING SITE FLOOR PLAN
(BUILDING 122, GARDEN ISLAND)

- INFRASTRUCTURE LEGEND**
- AWD COPE POINT
 - LHD COPE POINT
 - └─┘ BERTH FENDERING SYSTEM
- BERTHING POSITIONS**
- CW CRUISER WHARF
 - EW EAST DOCK WALL
 - F1 FLEET BASE EAST 1
 - F2 FLEET BASE EAST 2
 - F3 FLEET BASE EAST 3
 - F4 FLEET BASE EAST 4
 - F5 FLEET BASE EAST 5
- ▭ AWD SHIP
- ▭ LHD SHIP



INFRASTRUCTURE PLAN (GARDEN ISLAND)